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ABSTRACT

The second draft of the National Commission on Libraries and Information Science (NCLIS) report proposes a national program to offer the most information service to the greatest number of people. Current status and problems in all kinds of libraries are reviewed, including: distribution of resources; uneven access to information; the influence of technology; copyright issues; high cost of materials; inadequate funding; the negative aspects of limited information access; possible underuse of commercial information services; present network activities and barriers to expansion of such systems. NCLIS recommends: basic minimum services to all local communities; special services for the handicapped, minorities, etc.; improvement of present state resources and systems; the training of librarians and information specialists; coordination of present federal programs; involvement of the private sector; an agency to oversee the federal program; and a nationwide network with a shared communication system and common standards. Since the nationwide network is a major consideration of NCLIS, the responsibilities of the federal government in implementing the program are detailed, and the supporting roles of state governments, the private sector, and the Library of Congress are outlined. (LS)

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A NATIONAL PROGRAM FOR LIBRARY AND INFORMATION SERVICES

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FREDERICK H. BURKHARDT
Chairman

PREFACE

This revised draft is a framework for the library and information science professions and the American public on which to construct a new National Program of Library and Information Services for the people of the United States. It reflects personal comments received by the National Commission on Libraries and Information Science in hundreds of letters from private individuals, testimony given at many regional hearings throughout the country, and opinions gathered at open forums conducted through the professional press.

During the year the Commission will analyze and elaborate on the basic issues and questions. More than twenty people have been asked to prepare in-depth studies on specific topics so that by early 1975 the Commission can publish these papers as a group along with a more complete program document (approximately March 1975).

The Commission will also continue to solicit comments and emendations, particularly from the private sector and lay users, whose views and relationships to a national program have not yet been fully explored. It is anticipated that the next version of the draft will address the current problems confronting the information community and will outline an appropriate role for the private sector in a future national program.

The Commission's aim is to assemble the basic documentation required to substantiate the need for a new National Program and thus solidify a case for new federal legislation. The Commission expects to introduce draft federal legislation during 1976. That year, when we celebrate the 200th anniversary of this nation's independence, will be a most appropriate time to inaugurate a new National Program of Library and Information Services to realize the potential of the information revolution now underway.

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It should perhaps be stressed that this National Program Document has as yet no official status; it is a policy document, a set of conclusions and ideas for action. Its realization depends upon the Congress and ultimately upon the support it receives from the U.S. citizenry and from professional and private groups.

The members of the National Commission on Libraries and Information Science join me in thanking all of you who have assisted in the revision of the National Program Document to date. During the coming year, the Commission intends to further develop and refine this proposal and welcomes your suggestions and constructive criticisms.

Frederick H. Burkhardt
Chairman

I. INTRODUCTION

This is the second draft of a new National Program for Library and Information Services now in the process of development by the National Commission on Libraries and Information Science (NCLIS). It incorporates many of the suggestions and judgments received by the Commission as comments on this first draft, issued in October, 1973.

The National Commission views authors and publishers as the principal producers of the knowledge which powers our national progress and nurtures our educational system. Libraries, in the same context, are the repositories of this knowledge. They represent the vital links in the distribution chain which makes knowledge available to people. The Commission considers libraries, and the materials they contain, to be part of a national knowledge resource, that must be strengthened, integrated, and sustained for all the people of the U.S. to use as needed in the course of their personal and economic pursuits.

National concern for protecting and improving the nation's knowledge resources is evident in many past actions of the Congress and in the growing number of legislative proposals calling for specific information programs. The Office of Management and Budget, in the Executive Branch of government, has also stressed the need for orderly growth and wise management of library and

information facilities within the federal government.

If our nation is to achieve the most effective use of national information resources and the largest return for funds invested in them, common goals, objectives, methods and standards are needed now for the coordinated development of information facilities. Unless a coordinated program is established on a nationwide level, expenditures and efforts will be unnecessarily duplicated, and interconnection will become increasingly difficult as local, state and multistate systems develop without benefit of a common purpose and a common approach.

The Commission believes that the existing pattern of libraries serving limited geographic areas or various special interests will lead to costly, uneven and wasteful services if steps are not taken now to provide a common basis for their future development. Accordingly, the Commission believes the time has come to develop a nationwide program which would weld together today's collection of disparate parts into a total system of library and information services.

Essentially, the National Program formulated by the Commission is based on five major assumptions:

> First, that the total library and information resource in the United States is a national resource which should be developed, strengthened, organized, and made available to the maximum degree possible in the public interest. This national resource represents the cumulated and growing record of much of our nation's, and indeed, much of the world's, total cultural experience - intellectual, social, technological, and spiritual.

Second, that all the people of the United States have the right, according to their individual needs, to realistic and convenient access to this national resource for their personal enrichment and achievement, and thereby for the progress of society.

Third, that with the help of new technology and with national resolve, the disparate and discrete collections of recorded information in the United States can become, in due course, an integrated nationwide network.

Fourth, that the rights and interests of authors, publishers, and other providers of information be incorporated into the National Program in ways which maintain their economic and competitive viability.

Fifth, that legislation can be devised for the coherent development of library and information services that protects personal privacy and intellectual freedom, and preserves maximum possible local, state, and regional autonomy.

The National Program, still in its formative stages, derives from numerous nationwide hearings, from conferences and informal discussions, and correspondence with professional, technical, governmental, educational, and other experts, as well as library users, whose interests in the emergence of an information-centered program attracted them to the work of the Commission.

The Commission's working philosophy is user-oriented. It is the Commission's intent that the users of information - including potential, as well as current users - should be the principal focus of a national program.

The Commission's current objective is to develop a National Program that offers the most information service to the greatest number of people. Such a program must have

incentives strong enough to encourage maximum cooperation and participation, not only by states and local governments, but by interrelated public and private agencies as well.

From the user's viewpoint, the Commission will concentrate its efforts in the years ahead in the light of the following guiding ideal:

> To eventually provide any individual in the U.S. with equal opportunity of access to that part of the total information resource which will satisfy his educational, working, cultural, and leisure-time needs and interests, regardless of the individual's location, social or physical condition, or level of intellectual achievement.

In order to make progress toward the attainment of this goal, the Commission has developed two major program objectives: 1) to strengthen, develop, or create where needed, human and material resources which are supportive of high quality library and information services, and 2) to tie together the library and information facilities in the country, through a shared communications system and a set of common standards, to form a nationwide network.

The Commission makes the assumption that the nationwide network would not be federally operated or controlled, particularly, that there would be no federal control whatsoever over the information content flowing over the lines. The Commission also assumes that the nationwide network would not be a monolithic and authoritarian structure, but would form a shelter and framework for families

of geographic and functional networks developed and interconnected according to a unified plan. The government would have responsibility for aiding in the development of compatible state and multistate networks, for furthering common practices, for performing relevant research and development, for increasing coordination between the private and public sectors, for improving public access to the information resources of federal agencies, and for performing other relevant functions. As in the past, the bulk of user services would be delivered at the local level, but the network would provide back-up resources as well as directions for reaching specialized materials and information when these were needed locally.

The Commission's National Program, as described in this paper, is intended to provide the general basis for new federal legislation. It will lay the foundation for a major upgrading of library and information activities, an expansion of cooperative services throughout the nation, and planned system development.

II. THE NEED FOR A NATIONAL PROGRAM OF LIBRARY AND INFORMATION SERVICES

In establishing the National Commission on Libraries and Information Science (Public Law 91-345), Congress affirmed that "library and information services adequate to meet the needs of the people of the United States are essential to achieve national goals and to utilize most effectively the nation's educational resources". It called on the federal government to "cooperate with state and local governments and public and private agencies in assuring optimum provision of such services". Furthermore, the law authorized the National Commission to "promote research and development activities which will extend and improve the nation's library and information handling capability as essential links in the national communication networks".

THE RESOURCE

Information, whether in the raw form of empirical data or in the highly processed form we call "knowledge", has come to be regarded as a national resource as critical to the nation's well-being and security as any natural resource such as water or coal. The wealth of popular, intellectual, scholarly, and research resources in the libraries and information facilities of the United States is one of the great strengths of the nation. But like many

natural resources, knowledge resources, uncoordinated in growth and usage, are in danger of being wasted and inefficiently utilized.

In advanced societies, a substantial part of the culture is handed down to successive generations in the form of recorded knowledge. This resource consists of books, journals, and other texts; of audio and visual materials; and of smaller units of information or data that can be separately manipulated, as by a computer. In recent years, these records have become increasingly varied - through technological extensions of written words, pictures, and sounds. For example, a significant part of the country's information resource is now on film, on video tapes and in computer files. As the totality of the nation's knowledge grows, and as the number of records increases, our dependence on them increases and the need to gain access to them becomes more crucial. "No society can advance beyond a certain point without effective access to its collective memory of record, or conversely, an advanced society that loses control of the record will regress." (1)

In the United States, information is created, stored, processed, and distributed by a vast array of diverse information activities in the private and public sectors, employing millions of people and dealing with billions of dollars, using widely varying technologies to achieve equally widely varying objectives. The publishing industry,

indexing and abstracting services, the communications media, and private and public information services are just a few of the many and varied elements that make up the rich mosaic of the contemporary information scene. The 7,000 public libraries(2), thousands of school libraries, libraries in colleges and universities, armed forces, law, medical and religious libraries, special libraries, and information analysis centers, as well as other information facilities in the public and private sector, serve as custodians and dispensers of recorded knowledge in every form.

Libraries and other information facilities are the custodians of that part of our cultural heritage which is recorded. They must be adequately equipped, organized, financed and interconnected if their resources are to be made available to all the people of the U.S. This, the Commission feels, can only be brought about with the help of the federal government, in full cooperation with state and local governments, and related public and private agencies and institutions. The federal government has a continuing responsibility to implement innovative, flexible measures that will ensure the continuing development of libraries and information services.

THE NEED FOR ACCESS

Ready access to information and knowledge is indispensable to individual advancement as well as to national

growth. Information provided when it is needed, where it is needed, and in the form in which it is needed, improves the ability of an individual, a business, a government agency, or some other kind of organization, to make informed decisions and achieve particular goals.

Users are individuals, each with unique informational, educational, psychological, and social needs. A person may need "practical knowledge" to solve immediate problems in his daily life and work. He may need "professional knowledge" to further his continuing education. Or he may need "intellectual knowledge", the kind that furthers his understanding of the arts, humanities, and sciences, and which enriches his personal life. Reading for pleasure, pursuing an innovative idea, or exploring knowledge just to satisfy one's innate curiosity, are other valid motives for reading, listening or looking. In addition, people feel the need for ethical, religious and philosophical insights.

Organizations, like individuals, need information and knowledge. Business organizations need facts and data to forecast a market, develop a new product, or adapt a new technology. Schools need information to improve and extend the learning process. Research organizations need information to synthesize new data with known facts as part of the creative process. Government needs information at every level to formulate plans, refine decision-making, and help government workers to anticipate and resolve problems.

The Ninety-third U.S. Congress accurately described the character of the national information need in H.J. Resolution 734, which proposed a White House Conference on Libraries. The bill states that "...access to information and ideas is indispensable to the development of human potential, the advancement of civilization, and the continuance of enlightened self-government".

The totality of learning and the diverse nature of knowledge makes the classification of user needs an extremely difficult process. In order to understand the variety of user needs for library and information service and the extent to which they are being met, the Commission has conferred with many individuals and groups representing different constituencies. It is clear that library and information needs are felt at all levels of society, regardless of an individual's location, social condition, or level of intellectual achievement. Although library and information needs are not the same in all parts of the country, and although they vary widely among people by age, ethnic origin, educational achievement, work assignment, geographic location, and many other factors, most people feel some dependence on the availability of accurate and useful information.

User needs can be described from several perspectives. For example, the retarded, the illiterate, the blind, the visually handicapped, the physically handicapped, and the

institutionalized require highly specialized resources and services. Similarly, various ethnic groups, such as American Indians, Asian Americans, Black Americans, and Chicanos, require not only the traditional level of library and information service, but also various kinds of special help. For example, they need materials and services in their own language, or help in reading English, or specific knowledge such as where to go for a job. Users in the professions, such as the scientist, the researcher, the scholar, and the lawyer, require information for increasing their own productivity and for their continuing education. They often need information quickly, and some of them are accustomed to using computers, telecommunications, and other technology if necessary to get it. In addition, there are those whose information needs are affected by their location - the rural population and others in remote areas who do not have direct access to major resources as do their counterparts in metropolitan areas. Other user-groups, such as senior citizens, the very young, and the poor, need still other kinds of services and resources.

The Commission is keenly aware that much more must be done systematically to understand the information needs of various special constituencies in the United States such as the economically disadvantaged, the uneducated, and the handicapped. We need to know who they are, where they are, what they need, how fast they need it, and the value - to

them and to society - of increasing their access to information and knowledge. We also need to know who the non-users are, what information services are important to them, why they do not use the existing facilities, and how to encourage and educate them in the use of such facilities.

THE THREAT

America has an abundance of recorded information, not a shortage. However, this precious resource is concentrated in relatively few locations, often virtually inaccessible to millions of people, and is lying largely untapped. Thus, the challenge is to find the means for making these resources available to more people through an effective identification, location, and distribution system. Local library facilities designed for other times and conditions can no longer cope with the ever-increasing volume of information produced in this country and abroad - nor can they fully satisfy the rapidly changing information needs of our society.

The information-dependent institutions in our society - business, industry, education, government, professional societies, and others concerned with information service - are alarmed by the deteriorating ability of some information facilities to meet the essential needs of their constituents. In some fields, such as medicine, where the need is great and perhaps better understood, Congress has

passed special legislation for development of information systems tailored to those specific requirements. These have been successful. In other fields, where the need is no less great, there has been little or no federal activity. Local programs to improve libraries and provide better information services have been usually uncoordinated - lacking in continuity, overall leadership and sufficient funding. The nation must take steps now to strengthen and organize these resources into a coherent nationwide system, or it will soon face a form of information chaos which will sap the nation's intellectual energy and weaken its educational structure. Although information and knowledge exist in prodigious quantity in our country, they are unevenly distributed and we often do not have the means to move relevant information to those who need it when they need it.

New networks can be developed where needed and existing ones can be extended to allow the required information to be moved to individuals and groups, some of whom can scarcely be expected to travel to the established information resources available today. If this is not done, the nation's ability to adapt to changing environmental, societal, and political conditions and to find solutions to major problems is diminished. Without valid and timely information, the economy atrophies; without current and reliable information, society and government falter; with-

out relevant and useful information, individual development languishes; without adequate means for distributing information, new knowledge backlogs.

Libraries and information centers in the United States are not developing according to any national plan, and consequently, from a systems viewpoint their growth continues to be uneven and lacks cohesion. There are gross inequities in library service in the United States today. A new philosophy of library and information service is needed, one based on a common sense of direction and purpose, a commitment to national cooperative action, and a consistent program of equalization.

The scope of the Commission's charge by Congress encompasses the library and information needs of all the people of the United States. It is the Commission's view that the time to introduce remedial and innovative reforms is now, and not later when the information crisis becomes worse. Consequently, the Commission has directed its efforts toward planning a new nationwide program for better, faster, and more effective library and information services, a program which would eventually provide people everywhere in the country with access to broad reserves of intellectual energy so that they may lead full, satisfying, and productive lives as creative and responsible members of society.

THE INFLUENCE OF TECHNOLOGY

This nation's future capability to handle information effectively will, to an important degree, depend on how well and how rapidly we are able to integrate new technological methods and devices into the mainstream of our information activities.

Libraries are affected by four new technologies: computers, micrographics, telecommunications, and audio-visual systems. The use of computers in libraries has already been pioneered. However, direct application of computers in libraries has been focused mainly on housekeeping functions; the computer's potential for recording, analysing and retrieving information has not yet been fully explored and realized. In addition, there is a critical shortage of trained manpower and funds to help libraries convert from manual to machine methods.

The use of micrographics for compact storage is increasing but is far from widespread. While many publishers are making books, journals, and even entire libraries available on microfilm, there is still user resistance to materials in microform because special equipment is required for reading. In order for anyone to read the information in a small microphotograph, it must be magnified for viewing. Lack of an inexpensive portable reader, lack of standardized forms of film, and related equipment

incompatibilities, have seriously slowed the rate of acceptance. It has become clear, however, that microfilm technology offers considerable potential for cost savings in libraries and represents a new era in information transfer. Together with the computer and telecommunications it promises to become a powerful force in shaping future library and information systems.

Libraries have been reasonably active in acquiring audiovisual materials: films, filmstrips, slides, audiocassettes, videotapes, videocassettes, and computer tapes. Unfortunately, capable personnel to handle such materials are in short supply, and the equipment is not only complex and expensive, but in many cases so little standardized that it causes difficulty and confusion to the user. A critical source of evaluation is needed to cope with the profusion of new and often incompatible devices that continually appear on the market.

Community Antenna Television (CATV), also known as cable television, is a technology still in its infancy. CATV stations have very powerful antennas that enable them to capture TV signals from many distant transmitters and retransmit the signals to the home through underground cables. Just as telephone lines enter the home, so will CATV cables. It thus becomes possible to bring sound and picture answers to information questions directly to individual home TV sets, over CATV educational channels

reserved by FCC regulations for this purpose. Although there have been some library experiments exploring the possibilities for developing new library services and providing remote use of present services, much more needs to be done before the full potential of CATV for library applications is realized.

The potential for telefacsimile reproduction among libraries is very promising, but present costs per page of transmission and copyright problems hamper its extensive use.

The joining of such diverse technologies as computers and telecommunications represents a new capability of great potential value to the United States. As yet, the nation has not perceived the far-reaching consequences of being able to distribute information to distant points with relative ease. CATV systems and computer data banks are just beginning to be used by libraries as means for information dissemination.

In the last decade, technology for the creation, processing, and transmission of information has been vastly extended. Numerous on-line computer information systems are operating, and it is now realistic to consider harnessing the power of technology for new systems of organization, retrieval and distribution of information through networks. Advances in technology and in information practices occur each year. The Commission believes that the potential

of the new technologies must be utilized to the fullest extent possible, and that this potential can be realized only by means of coordinated planning.

National planning for information technology is essential for several reasons. First, information technology is costly, and a long range commitment from the federal government is required for sharing costs, contributing to research and development, and ensuring the stability of the program. Second, information technology is complex, and a common sense of technical direction at the national level is imperative if all relevant agencies are to coordinate their activities effectively. Third, information technology is specialized, and its implementation will depend upon the technical education of the people who will work with it. And finally, information technology breaks down former barriers to access. Its introduction, therefore, invariably alters traditional ways of doing things and necessitates national concentrated attention to re-education of the specialist and the user.

There are two other important reasons to plan on the national level: 1) the rising cost of conventional library operations requires that information activities develop cooperative arrangements, which, if done outside of a national context, will be very difficult to interrelate; and 2), today's federal policy decisions with respect

to telecommunications can greatly affect information practices for many years to come.

A THRESHOLD ISSUE

Resolution of the complex problem of copyright is crucial to the continuing development of cooperative programs and networks among libraries.

It was the Copyright Law which enabled the United States to achieve for its people the freest, the most uncensored, and the widest dissemination of information in history. Copyright is in fact the Constitutionally prescribed means for promoting the progress of science and the useful arts. It provides the creator a limited monopoly, not in the ideas, but in the form in which they are embodied.

In recent years, because of the widespread introduction of easy-to-operate photocopy machines and simplified means for distributing information electronically, the issues relating to copyright protection have grown increasingly complex. If the nation is to maintain the open and free society we enjoy today, with broad dissemination of information, then an updated system of copyright is absolutely essential.

Copyright issues are now before the Congress and the courts. An eventual solution must address the "threshold problem" of reconciling the rights and interests of authors, publishers, and other providers of information - in

order to encourage the continuing creation and dissemination of their intellectual work - with the interests of the user in obtaining ready access to these works. The judicially constructed doctrine of "fair use" provides only a partial answer to this problem and new solutions must be worked out which will maintain the economic viability of publishing in the context of new technological means of reproduction and electronic distribution.

The Commission believes that it is essential that the needs of networking systems should be among those considered by the Congress in devising new statutory provisions and that a sound and clear copyright policy be worked out which provides incentives for the essential private sector investment in the general enterprise.

Workable means must also be found whereby the library community can satisfy its legal and moral obligations to the author and publisher while meeting its institutional responsibilities to its patrons. In the meantime, the Commission encourages efforts to clarify the distinction between copying that does not require permission and compensation and that which does. It also encourages efforts to establish means by which permission, when required, can be readily obtained. Finally, it encourages efforts to establish cooperative arrangements between libraries and publishers, possibly with the use of computer networks for processing, for obtaining permission or licenses and accounting for usage.

THE RATIONALE FOR FEDERAL INVOLVEMENT

While the federal government appears to be broadly aware of the part played by libraries and information centers in national growth and economic productivity, the Commission believes that now is the time for the federal government, in cooperation with state and local governments, to treat information as a national resource. The Commission believes that the concept of a National Program of Library and Information Services is a highly appropriate focus for governmental action because the concept is designed to promote a match between:

(1) user needs for information that are more pressing than ever before; and

(2) information technology that is nowhere more strongly developed than in the United States.

It should be recognized that the United States, though it may have a unique opportunity to plan its "information economy", is not alone in this position. Japan, West Germany, and other countries have published national papers which attest to the importance of national information policies and networks. Norway has been working effectively for the last few years through its National Office for Research and Special Libraries, and in Great Britain, the British Library Board has made remarkable progress under its recent charter. If we, in this country, fail to link our own resources together nationally so that all can use

them, we will be neglecting a very significant contribution that we can make to the quality of our life and the productivity of our people. We may also be missing the opportunity to join other nations in sharing resources on an international level.

The implementation of a workable national program requires close cooperation between the federal government and the states, between state and local governments, and between the federal and state governments and the private sector. Such cooperation is most appropriately fostered through federal legislation. Legislation would adopt as its prime philosophical goal equal opportunity of access to the nation's library and information services. Practically, it would seek better organization, development, coordination, and management of the nation's libraries and information facilities and services.

III. CURRENT PROBLEMS OF LIBRARIES

The previous section addressed the urgency of dealing with the problems of information in the United States and described the federal government's responsibility for coordinating a nationwide program which would provide as an ideal goal that every individual in the country have equal opportunity of access to the information and knowledge he needs.

Any program of this magnitude, however, requires that the current situation be assessed and understood before specific recommendations are made for future improvement.

There are almost 30,000 libraries in the United States today.(3) They vary in size and complexity from small village facilities with only a few shelves of books for recreational reading to large research libraries with magnificent collections on many subjects. Collectively, they are the foundation on which a nationwide information network should be built. The fact that problems and deficiencies exist in no way denigrates the successes and achievements of the past. On the contrary, the purpose of presenting problems and deficiencies is to take stock and to build on the best of what is available.

PUBLIC LIBRARIES

Public libraries in the U.S. are facing new problems with respect to their internal operations. Financial support is not keeping pace with increasing costs; and the

libraries are under increased pressure to give service in more breadth and depth to a wide range of users who vary in age, education, and interests. They are limited in their ability to tap new technological sources of information, and they are constrained from upgrading their present manual methods to automated systems. In many instances, these problems have caused the public library to affiliate with technical processing cooperatives, to depend on larger libraries for backup, to expand interlibrary relationships, and to join public library systems and networks outside their local jurisdictions.

More than any other type of library, public libraries are close to the people in the communities in which they exist. Public libraries, including the smallest, are the backbone of the library system in America, and are the potential windows on any future nationwide network. Therefore, a great deal depends on the strength of their human and material resources and on their ability to undertake new programs of value to their constituents. Financial studies indicate that local sources of revenue alone will be insufficient to meet the public's demand for new programs, new construction, and new staff.(4) The public library, particularly in large metropolitan centers, is in a state of flux, and major changes in its funding and operating philosophy must occur if it is to serve its community effectively in the future.

SPECIAL LIBRARIES

Although special libraries (including technical and other information centers) may be less familiar to the general public, their services make an enormous contribution each day to America's business, industry, and government. Typically, these libraries are found in private businesses and industrial corporations, but many are located in federal agencies and in associations and societies devoted to trades or professions having social roles. Special libraries are usually concerned with a single subject area, and are usually part of a larger organization. For example, the Caterpillar Tractor Company, IBM, Bell Laboratories, Proctor and Gamble Co., and thousands of other companies have special libraries which serve them with information in their particular fields of interest. In addition, there are special libraries which concentrate on forms of material like maps and pictures, and still others associated with museums, hospitals, prisons, newspapers, radio and TV stations. Taken together, special libraries represent a collection of information resources which treat specialized subjects in depth, emphasize up-to-dateness in the information they keep, provide a capability for quick response, and often use automated techniques for data storage and manipulation. These libraries are used by chemists, doctors, insurance men, security analysts, psychologists, lawyers, economists, engineers, metallurgists,

personnel experts, editors, retailers, nurses, managers, and many others.

The principal role of the corporate special library has been, and continues to be, providing information for immediate and utilitarian purposes, that is, to serve people who have work-related needs for information. Four existing constraints, however, prevent these libraries from being fully utilized by people throughout the country. The first constraint is geographic location. Most special libraries are concentrated in urban areas near large metropolitan and industrial centers, and are either unknown or inaccessible to those outside the immediate area. The second constraint is organizational affiliation. Because special libraries are usually affiliated with specific organizations, they tend to restrict their information services to the staff of their parent organization. The third constraint is proprietary information. Many of the companies maintain confidential files about their own research. These files are generally a small part of a special library's collection, necessitating special handling and careful separation. The fourth constraint concerns the issue of compensation for information service. Some companies may be willing to offer their information services free of charge, others may require a fee, and it is not yet clear how the accounting for usage would be transacted.

It is probable that many special libraries in the United States have collections of materials, or in-depth files of information, which are the most complete and possibly the best organized of any resources on particular subjects in the country. Yet, the Commission believes that a great many citizens with complex, work-related information problems are not now being served by specialized information services. If meeting work-related information needs is as important as the Commission believes, then devising a network mechanism by which selected holdings and services of special libraries can be made available to more people throughout the country would be extremely beneficial to the nation.

SCHOOL LIBRARIES AND SCHOOL MEDIA PROGRAMS

School libraries are important in the personal, intellectual, and social development of the American child. They house the many materials required by the child for his formal teaching-learning activities, and they represent the primary access point in school to which the child comes to find recorded knowledge. The school library often gives the child his first exposure to information resources and molds his information behavior for the future. Thus, the school library plays an essential part in readying the child for his adult role in society.

In addition to keeping and making available books and

magazines, school libraries are also becoming media centers. Audiovisual materials of every description - slides, films, filmstrips, audio and video cassettes, etc. - plus the equipment on which they are played, are a new responsibility of the school library. Presently, school media programs daily serve over 40 million students, administrators, teachers and staff, and in some communities provide service to parents and the public as well.

Despite its fundamental role in educating the child and in shaping his future information habits, the school library is deficient in many ways. In most cases, school libraries are operated far below ALA standards. Generally, they do not have enough books and audiovisual materials to support the varied facets of the curricula; many do not have professional personnel and must rely on volunteer assistance. Inner-city schools are usually too crowded to even have space for a library. School librarians, where they exist, usually do not have any clerical help or supportive staff to carry out routines. All schools urgently need supportive staff that is technically trained to take full advantage of the new educational technology.

Within recent years, school libraries have begun to devise new programs for sharing resources and coordinating media activities. Although many school librarians see the potential benefits clearly, recent reductions in federal

funding have slowed down this trend. The proposed consolidation of categorical aid programs for elementary and secondary schools would have a further negative effect upon cooperative efforts. Local resources at the school library level will always be needed to serve the child and support his formal education. However, access to the broad resources of a nationwide network would increase a child's opportunity for independent study and add to his development in becoming a literate, well-informed citizen.

UNIVERSITY AND RESEARCH LIBRARIES

Research libraries are concerned primarily with

- resource development and conservation
- bibliographic access to resources
- and research library services, including both guidance in the utilization of resources and delivery of materials.

The major research libraries in the country, both private and public, represent the bibliographic foundation of the nation's research effort. They participate actively every day in the distribution and exchange of books and other materials to sister institutions all over the country. Collectively, these institutions serve students, faculty, scholars, and researchers who are engaged in work in the sciences and the humanities, as well as the general public. Like the universities in which most of them are

situated, research libraries are confronted today with rising costs, a rapidly changing set of educational objectives and the impact of new technology. With the publishing rate increasing and the dollar shrinking in value, research libraries are finding it increasingly difficult to cope with their work loads and are unable to meet all of the varied demands placed on them. As a group, however, they have begun some cooperative efforts to improve their own operational efficiency (e.g., streamlining interlibrary loan procedures, standardizing approaches to computer use, developing cooperative acquisition programs, and sharing resources). They have also defined a long range program for collective action to help overcome existing problems by:

- introducing new means for extending access to recorded information
- ensuring a national capacity for continuing development of distinctive collections and resources
- initiating research and development activities of common concern
- creating a national bibliographic data base in machine-readable form
- developing a national program for the preservation of research materials.

Research libraries in the U.S. have combined resources

of over two hundred million volumes. They are prepared to share these resources with others; indeed they are now sharing them through a growing system of interlibrary lending. However, under the existing arrangements the larger libraries, which lend more volumes than they borrow, bear a disproportionate burden. While seeking to improve and extend such service, the research libraries need federal assistance to help them correct sharing imbalances and permit them to serve more users than just their primary clientele.

Many research libraries have collections of unique scope and quality. The maintenance, preservation, and development of these collections is a responsibility that must be shared if they are to continue to serve as a national resource. Research libraries must deal with the effect of rapidly rising costs upon all of the services they customarily provide. The present costs of supporting instruction and research are such that libraries are without the necessary means to undertake more innovative and effective programs. If the federal government could provide sufficient research and development funds, it would permit these libraries to experiment with various forms of collective activities that would serve not only local needs but regional or national needs as well.

Although the major research libraries have evolved independently, there is a trend today toward greater inter-

dependence among them. Their combined resources represent an asset of great value to the nation, and the Commission believes it is in the best interests of the country to assist these important institutions in forming a stronger set of working relationships that will permit them to serve more, rather than fewer, people. Federal assistance in establishing centralized bibliographic services, in developing technical standards for computer and communication usage, and in helping to sustain a select number of individual collections, are among some of the actions the federal government can take toward making research libraries active participants in a nationwide network. While the Commission does not advocate total subsidization of collections by the federal government, it does see the need for developing criteria by which certain repositories of information, in the public and private sector, are partially nourished by the government in exchange for their wider availability to the general public.

The Commission believes that the problems facing the research libraries can not be solved by the individual institutions acting alone, or through local or state jurisdictions alone. Some combination of federal, state, local and private support is needed if these institutions are to function most effectively.

OTHER ACADEMIC LIBRARIES

With some exceptions, college and junior college

libraries are inadequate. In some cases, colleges, particularly junior colleges, have no libraries at all. In others, the libraries are so poorly housed and stocked that the quality of the instructional program is seriously impaired. Very often newer colleges enroll students before adequate library resources are on hand to support their studies. The ALA standards which stipulate a minimum of three professionals - one for administrative duties, one for reference and circulation, and one for cataloging - are rarely met in the smaller colleges. As a result, many of these campuses lack the staff and library services they need, and are unable to improve their situation.

After 1945, when college enrollments and budgets were on the rise, some colleges were able to expand their library programs. Those that did now have strong collections for their undergraduate users. Many other libraries, however, were less fortunate and several constraints in the past few years have kept them from remedying the situation. Inflation, the information "explosion", changing curricula, decreasing enrollments, and decreasing budgets are some of the reasons for their slow growth. With acquisitions being curtailed, college libraries are in a declining situation and their ability to be responsive to the demands of their students and faculty is diminishing. College and junior college libraries borrow more than they lend and a national cooperative program would increase their ability to satisfy the specialized demands of their constituents.

FEDERAL LIBRARIES

The U.S. government operates more than 2500 libraries within the federal establishment. Most support specific federal statutory missions and have, as a consequence, accumulated specialized resources of major significance. The Library of Congress, the National Library of Medicine, and the National Agricultural Library in particular, possess national collections which are unique. The information resources of most federal libraries, however, are not easily accessible to the general public, and a serious need exists to promote their use more widely.

Although some informal cooperative efforts among federal libraries do exist, they are not yet organized as a formal network. However, federal libraries meet periodically to discuss programs of common interest and, to a limited extent, they share resources, and engage in cooperative education and training programs. Through the good offices of the Federal Library Committee, the federal library community is striving to achieve greater coordination. A proposal to form a federal library network which would function as a major component of a national information network is presently under study by the Federal Library Committee.

Federal libraries give priority to serving the internal information needs of their respective agencies. They recognize the value of serving the general public, but few

can do so because of budgetary and administrative constraints. To enable federal libraries to make their resources available to the public, will require specific authorizing legislation or specific fund allocations.

Many federal libraries do not enjoy the full support of their agency administrators. The latter generally consider libraries to be part of overhead - no different from such categories as supply, mailroom, inventory, etc. In an effort to change this attitude some libraries have changed their name from "library" to "information center" hoping this new phrase will more aptly convey the substantive character of their function. Federal libraries then, need to be strengthened in many ways to enable them to serve a larger section of the population.

At present, there is no government-wide policy concerning the process by which new federal libraries and information services are established. As a result, duplicate collections can easily be built. To avoid such costly errors, new agencies should be required to consider alternatives like (1) contracting for information services with an existing federal information service or library; or (2) contracting with the private sector for such services; or (3) developing network arrangements in the public and private sectors to satisfy the new need for information.

The federal library community believes that government agencies should not initiate information services that can

be provided by the private sector unless the cost to the government would be significantly reduced or unless the private sector service is unable to meet the government's specifications for timeliness, quality, and continuity. The Commission is keenly aware of the need to establish government policy with respect to the roles to be assumed by the public and the private sectors in the distribution of information gathered through government programs. Both sectors have important roles to play and means must be found which encourage them to be mutually reinforcing rather than competitive. Because information generated by the government is in the public domain, mechanisms are required which will encourage the private sector to cooperate with the government for the more efficient and effective marketing and distribution of information collected or generated by the government.

GENERAL OBSERVATIONS

From testimony taken at the Commission's regional hearings, from relevant research studies and reports, and from conferences with professional and lay groups, a number of observations can be made concerning some of the major problems besetting the nation's libraries. The list is not all-inclusive, but it represents the principal concerns facing the field as expressed by numerous persons coming before the Commission.

1. The growth of libraries in the U.S. has been fragmented and uneven. They evolved independently, and do not presently constitute an orderly national system. The level of library and information service in the U.S. is below the American Library Association's standards in most parts of the country. Certain segments of the population are better served than others. Library development is often unsystematic and unintegrated. This fragmented development will eventually lead to waste, duplication, and the inefficient use of the total national knowledge resource. Moreover, if libraries continue to develop as they are now - unrelated to one another, a miscellany of informal cooperative arrangements, lacking common standards and compatibility, etc. - in five years time it may no longer be possible to organize them into a cohesive national system.

2. Library and other information resources in the United States are unevenly distributed, a fact which stems from the uneven population distribution and diverse tax structures in the country. While some people in the U.S. have easy access to rich resources, others are deprived of even the most basic materials. Financial support of libraries varies widely. Thirteen states, for example, have no state aid programs for public libraries, and many communities throughout the country lack the most elementary form of basic library service. According to the 1968 Report of the National Advisory Commission on Libraries, "some 20

million Americans, largely in rural areas, have no public library service at all, and some 10 million more have access only to very small libraries with very inadequate collections and little or no service from professional librarians." Although the population which has access to library services today represents a substantial improvement over the situation which existed thirty years earlier, the service outside large urban centers is usually inadequate.

3. There is a critical need to identify and address the problems of those without even the most basic information services, and those that are being served only marginally.

4. With the increase in the amount of material being published, the emergence of new audiovisual materials and computer data banks, the mobility and specialized needs of constituents, and the rising cost of personal services and materials, has come the realization that there is a limit to self-sufficiency. Not even the largest libraries can any longer afford the cost of acquiring all the books and other relevant information needed by their constituents.

5. Special libraries with information resources for work-related needs exist in different cities but at present they serve only a limited clientele.

6. Funding for most library and information services at every level - state, local, and federal - is inadequate.

A major change in the federal investment in library and information services is needed to ensure systematic development through funding formulas and arrangements that are mutually reinforcing at every level.

7. Greater collaboration is required between libraries and the commercial distributors of the newer information services. The average user and the average librarian are unaware of the many commercial information services and computer information retrieval systems available for their use.

8. New federal and state legislation is needed that will give local libraries the incentive actively to join larger systems of service outside their immediate jurisdictions. Without incentive and assistance, it is unlikely that local jurisdictions will allocate funds to provide extra-jurisdictional services through regional or national networks.

Not all library problems are included in the above list but it does reflect some of the major deficiencies which need correction.

IV. CURRENT PROBLEMS OF INFORMATION SERVICES

NOTE

A special section on problems confronting the information science community and the information industry is in preparation and will be included in the next Draft of the National Program Document.

V. THE TREND TOWARD COOPERATIVE ACTION

PRESENT NETWORKING ACTIVITIES

Today's libraries generally have insufficient resources to meet the needs of the times. The major problems facing them were discussed in Section III. Briefly, they were:

- the increased cost of acquiring library materials and organizing them for use
- the difficulty of recruiting and compensating skilled personnel for these tasks, especially when the range of languages, subjects, and services is great
- the growth of knowledge with the consequent demands, particularly on academic libraries, for a wide range of specialized materials
- the cost of storing infrequently used materials that accumulate when a library tries to be self-sufficient
- the requirement to serve constituencies that are not now being served.

These problems are not new, but they have become more serious over the years and have, in the last few years, reached critical proportions.

Today no one library can afford the cost of acquiring and servicing all the books, journals, microforms, computer

data bases, videotapes, audiovisual materials, and other information necessary to satisfy both the highly sophisticated user and the average person yearning for knowledge to meet today's challenges.

Libraries have long realized that service to their patrons can be markedly improved through "resource sharing" practices which allow any one library to augment its holdings by gaining access, through interlibrary loans, to the holdings of neighboring libraries. Many years ago, this kind of activity was called "library cooperation". The union catalog has been one of several devices used by libraries to facilitate the sharing of resources.

During recent years, encouraged by federal and state leadership and funding, and by the prospect of providing better service, libraries across the country began to develop new kinds of organizational relationships to increase the sharing of resources. These cooperative programs are now variously referred to as "library systems", "library consortia", or "library networks". Some consist merely of informal, mutual agreements to share materials. A large number are bound by formal contracts and use conventional communication means, such as the telephone and the teletype; the number of those who call for the utilization of computers and telecommunications is relatively small, but is growing rapidly.

A number of federal institutions, like the National Library of Medicine, have become major centers for the design and development of computerized communication services for particular constituencies. They have moved ahead to form local and regional networking arrangements that conjoin several institutions in a formal organizational pattern. Equally extensive information retrieval (IR) service networks embracing several hundred terminal sites have been established in the private sector by such companies as Lockheed Missiles & Space Company and The Systems Development Corporation. Such networking agreements not only give each participant access to data created in other centers, but they have also made it possible to provide other cooperative services.

Typical of existing library networks are those formed by the libraries of the large metropolitan cities. Because the great bulk of America's library resources are located in metropolitan areas, and because so many of these areas cross state boundries, some metropolitan cities have initiated cooperative library network programs independently. Some were aided by support directly from the states concerned, but others were started as a result of receiving planning grants directly from the Department of Housing and Urban Development (HUD). Since not all networks may originate as part of a statewide program, the National Program must include provisions for channeling direct funding to

interstate and multistate groups which do not fit the state pattern and which are capable of starting broad cooperative programs on their own initiative.

Intrastate networks are being planned or are in operation in Washington, Ohio, Illinois, Iowa, New York, Minnesota, Wisconsin, Maryland, and California. A network crossing state boundries has formed in the northeast called the New England Library Information Network (NELINET), where the Departments of Higher Education in six states have agreed to develop their library and information programs together. Other multistate groups such as the Southwest Library Interstate Cooperative Endeavor (SLICE) and the Southeastern Library Network (SOLINET) have formed to carry out prescribed functions together. In addition to NELINET, SLICE, and SOLINET, there are still other activities that use commercial communication networks to facilitate the distribution and communication of bibliographic data to libraries in any state. The most active of these in the public sector is the Ohio College Library Center (OCLC), which today serves several hundred library terminals from a single computer in Columbus, Ohio. Its program allows participants to search a large bibliographic data base from a computer terminal. Other such centers are being developed in New York and in Texas. Similarly, the Information Dynamics Corporation in Massachusetts has announced

plans to operate a similar bibliographic service to libraries over a system it calls Bibnet, an acronym for bibliographic network. Both organizations provide for service charges according to a fee schedule, and both make active use of the Machine Readable Cataloging (MARC) tapes prepared at the Library of Congress. At the state level, the State of Washington uses a cataloging data base as the foundation for an automated network connecting all libraries in the state; on-line development is expected to be completed by 1975. In addition to supplying centralized cataloging for the libraries of the system, computers will also produce processing kits (cards, labels, etc.) as well as book catalogs. Development of the acquisitions, circulation and serials modules are being planned for the 1975-77 biennium at the close of which all state supported institutions and major public libraries will be on-line to the central data base.

Although none of the existing library networks has reached full potential, and will not do so for years to come, a few have demonstrated the viability of resource sharing through electronic networking, and have shown some of the benefits that can be derived from speedy electronic communication. Library functions that can obviously benefit from improved interlibrary communication are interlibrary lending, coordinated acquisition programs, and shared cataloging.

The primary source of centralized cataloging data in the U.S. is the Library of Congress, which makes available for a fraction of the cost of original cataloging, printed catalog cards of any of the titles it has processed since the turn of the century. Shared cataloging, in the form of printed cards with common bibliographic information, is also available from commercial companies such as Richard Abel and Co., H.W. Wilson Co., and Brodart Industries.

In the area of reference services, some consortia, as well as many individual libraries, are using interactive computer timesharing systems for citation and data retrieval, while still others are investigating future use of electronic communications as an alternative to mail for the routing of larger volumes of textual material from library to library.

Some of today's statewide networks include only one type of library, e.g., public or college; others, called "intertype", involve all types of libraries and information centers. Their administrative structures vary, as do their services and membership. The degree of formality in a statewide network appears to be a function of size. Strong statewide networks require dependable and sustained funding, a legal base, a willingness on the part of the members to yield some local autonomy, a structure that will survive changes in personnel, and provision for growth and change. The impediments to success are preoccupation with questions

of control and organization, and impermanent funding mechanisms. Workshops and continuing education programs in organization and management help to bring about understanding of the human and administrative problems; the National Program would help to provide continuity and stability to such efforts.

While many statewide networks are considered successful on local and regional levels, most are proceeding without plans for an eventual tie-in to a nationwide network. Statewide networks are the cornerstones on which a nationwide network will eventually be built, and it is only through careful planning toward a nationwide system that they can develop in harmony. Interstate compatibility is mandatory if statewide networks are to be economical and efficient in the context of a national network.

It should be emphasized that NCLIS regards the self-generating and on-going trend toward cooperative statewide and multistate networks as a positive step forward which should be encouraged and abetted with federal support. Although there is no standard by which to measure the "value" of increased access to information that a network may provide, it seems clear that economic, educational, and recreational benefits will accrue in due course both to the individual and to the country as a whole if a nationwide network were implemented.

BARRIERS TO COOPERATIVE ACTION

In viewing the environment in which a nationwide network could become a reality, the Commission recognizes the following barriers and impediments that will have to be overcome to achieve the increased cooperation required to implement a nationwide network:

1. The information community in the public and private sectors is growing more diverse, and the component parts - the libraries, the publishing industry, the indexing and abstracting services, the education community, and the various government agencies - have had little or no experience in working together toward a common national goal. The Commission recognizes that the success of any comprehensive nationwide program must, therefore, have the fullest involvement and cooperation of all the elements of the information community. The Commission also regards it as important that the functions and relationships of all segments of this community be carefully studied and integrated into the program. Only if the total information community is joined together by a common objective will it be possible for the nation to attack the pressing information problems that confront it.

2. State and local, institutional and private funding for libraries and information activities is unstable and insufficient. Funding is not planned to foster interlibrary cooperation in a major way, and consequently no

mechanism exists whereby local, state, and federal funds can be made mutually reinforcing for cooperative national purposes.

3. Jurisdictional problems are impediments. Although information and knowledge respect no geographic boundries, and user needs are as various as the human mind can make them, the provision of information service in many localities is still limited by the taxes supporting a particular jurisdiction. Traditional funding patterns will need to be changed to make them equally supportive of local and nationwide objectives.

4. No national guidelines are available to ensure the development of compatible, statewide and multistate network development. Unless administrative guidelines of this kind are formulated soon, there is danger that a heterogeneous group of statewide networks will emerge that may be difficult and expensive to connect or that may never be connected at all.

5. The rich resources of the federal libraries and information centers must become an integral part of the nationwide network. This will require that these organizations adopt a more open policy toward serving the general public in addition to their respective departments and a willingness, among themselves, to form a federal library and information service network - one which does not now exist.

6. Professional librarians have concerns about the real values of the use of new technology. This concern is reflected in the caution with which libraries throughout the country have moved to convert from traditional methods to machine methods. Such conversion in large part implies a reallocation of personnel, and entails a new and unfamiliar approach to library management. Mainly, the problem is not technical but attitudinal. Technology also implies an entirely new conception of the library and its services. It requires the librarian to remold his thinking, to be willing to change his notion of librarianship, and to "...rise above the computer, above the engineer, above the systems analyst..." and thereby push the profession into a position of real social utility.(5)

7. The human resources required to plan, develop, and operate the nation's libraries and information centers are, of course, the most important elements in today's systems, as well as in tomorrow's networks. Because future systems are not yet determined, the quantity and quality of manpower that will be needed to meet future demands cannot be assessed with certainty. It is evident, however, that new approaches to library and information science education will be necessary if professionals, paraprofessionals, and other personnel are to be equipped to function in nontraditional ways. Although many library operations will undoubtedly continue to be performed in traditional ways,

it is becoming progressively more important for librarians to be acquainted with the new technology. Schools of library and information science are in the process of re-evaluating their curricula in order to accommodate innovative programs. Today, however, most of our educational institutions are not turning out professionals who are technically equipped to deal with non-print materials or with computer and communications technologies.

8. Except for the Library of Congress, the United States does not yet possess an official national bibliographic center to coordinate the processing and distribution of standard bibliographic records for the use of all libraries and information centers. The current complex pattern of bibliographic services consists of a multiplicity of organizations, in the public and private sectors, providing a variety of products and services. National bibliographic control is needed to identify items of recorded information in all media, to provide intellectual access to each such item of information, and to standardize the processing and communication of relevant data.

9. One of the chief obstacles to sharing resources is the lack of public knowledge about the location of available resources. Not only must the public be made aware that library networks and commercial information services exist, but every potential user must be instilled with the desire to learn, to read, to find out, and to know. Every

technique known to the teaching profession and to the television, radio, and newspaper media should be used to educate the user about the location of library and information services available to serve him.

The barriers and problems recounted above are in part a result of the independent growth which has characterized the development of libraries and information services in this country. To erase barriers to cooperative action will call for a major new program that is built on the concept of national cooperation. A new program will require cooperative action among libraries and also call for cooperative action between the producers of information in the private sector and their consumers. The endurance of the information cycle, from production to use, depends on viable economic relationships. The next section addresses these issues and sets forth the outline of a proposed National Program.

VI. THE RECOMMENDED NATIONAL PROGRAM

At present there is no national program of library and information service for the development of federal, state, and local library and other information activities in the United States. As a result, existing programs are generally unrelated to one another, and continue to develop throughout the country in uncoordinated ways. In some cases, this tends to lead to incompatible systems and counterproductive activities. For this reason, the Commission believes the time has come to ensure that future development of the nation's information resources will occur in a cohesive manner according to a national plan.

The National Program proposed by the Commission represents an overall structure within which current deficiencies can be corrected and future requirements can be addressed. The Program is designed to be evolutionary and does not pretend to solve all of the problems besetting today's library and information world, but it does set forth certain objectives that can guide its development and improvement in the years ahead.

The National Commission is firmly committed to the continuation of categorical aid as part of the National Program. Although past federal funding achieved many worthwhile objectives, the results fell short of the original goals and much more remains to be done. The proposed

National Program would coordinate and reinforce all federal efforts to support local and specialized services and, at the same time, provide a national framework for planned, systematic growth of library and information services in the public and private sector.

PROGRAM OBJECTIVES

Objective 1. Ensure that basic minimums of library and information services adequate to meet the needs of all local communities are satisfied.

Local libraries and information centers, whether large, medium, or small, and whether public, academic, or school, are vital links with the people. Local libraries are the first place in the community where most people generally go to find information. Unless local systems, therefore, are strong and are supported by continuing, aggressive and dynamic leadership they will be ineffective members in any program of nationwide scope. The sharing of resources is no remedy if resources are inadequate at the local level. Strong systems need strong components. It is, therefore, imperative that the National Program provide that local communities attain certain basic levels of service and materials and that their human resources are also strengthened. Only when local resources have been strengthened can resource sharing and other joint efforts

lead to successful networking arrangements at state and national levels.

Major existing legislation relating to libraries and education for librarianship (Library Services and Construction Act, Titles I, II, III, and IV.; Elementary and Secondary Education Act, Title II; and the Higher Education Act, Title II) has accomplished a great deal, but it is the Commission's view that federal support in the form of categorical aid is still needed, and that every effort should be made to retain it.

Objective 2. Provide adequate special services to special constituencies, including the unserved.

There are large user constituencies which require services and materials of a specialized sort. Such groups include the poor, the illiterate, the blind, the visually and physically handicapped, the ethnic minorities, American Indians on reservations, the very young, senior citizens, inner city youths, migrant workers, and many other parts of our society. The Commission believes that all people have a "right to read" and that the federal government has a responsibility to help them.

In accordance with the Commission's goal that every individual in the U.S. must, through his local community, be given equal opportunity of access to the resources he

needs at the time he needs them, the National Program must ensure that those people requiring specialized services get them.

A large segment of the population is economically disadvantaged. Many cannot read. Yet, libraries could change in such ways as to help them through outreach programs and could serve as sources of information on welfare problems, employment, education, and literacy.

The number of people belonging to ethnic minorities in this country is very large - about 40 million Black Americans, Asian Americans, and Chicanos. Many of these people have no library or information services at all, and where such services exist, the personnel who operate them are sometimes perceived as insensitive and unresponsive.

The more than six million blind and physically handicapped persons in the U.S. need materials in a special format. The National Commission commends the Library of Congress Division for the Blind and Physically Handicapped for its dedicated work in this area, and regards it as critical that its work be continued and expanded. Specifically, the Commission recommends that added efforts be made to seek out and serve those eligible for the service, utilize more effectively limited resources available, considering the expense and time consumed in the production of embossed and recorded books and periodicals, increase the quantity and quality of available materials, taking advan-

tage insofar as possible of new technological advances in the production of braille and music braille, and implement plans for the computerized National Union Catalog of embossed and recorded materials. Attention should also be directed toward the continued increase in the number of appropriate circulation outlets so that handicapped persons may be served more adequately by their local libraries, centralized cataloging, further development of the multi-state service, storage, and distribution centers, development of more efficient interlibrary loan techniques, and the promotion of cooperation and communication among participating libraries and agencies.

The Commission is aware of and very much concerned about the special library and information needs of the American Indian and the responsibility of the federal government toward meeting this need. In its treaties with Indian tribes, the federal government undertook an obligation to provide adequate education to Indians on their reservations, which includes a concomitant obligation to provide complementary library materials and services. There are still many people on reservations that hardly speak or understand English. The provision of bilingual materials is therefore very important. Equally important is the need for suitable training programs for Indians at both the professional and paraprofessional levels. Libraries must be the institutions that provide information to the community,

and Indians need Indians to serve them. Because American Indians pay no taxes while living on the reservation, they do not qualify for matching funds and have remained outside the mainstream of past federal funding for libraries. The new National Program must provide a workable base for assistance and ensure that Indian reservations are tied into the proposed nationwide network.

The Commission believes that service to specialized constituencies ranks very high in the scale of priorities for the National Program. Every person in America, regardless of his economic, cultural, or social situation, should have the same right of access to knowledge.

Objective 3. Strengthen existing statewide resources and systems.

Not all states are at the same level of library and information service development. Some states have well-developed programs, others function at lower levels, and still others have no statewide programs at all. Because the states are the essential building blocks in any national information system, it is important that they mature to comparable levels of proficiency and strength as parts of a nationwide program.

Most states do not yet provide sufficient funding to their library and other information activities. The pro-

posed National Program of Library and Information Services would provide formula-matched funds to the states to help them attain certain minimum requirements with respect to materials, services, and staffing. In time this should enable their libraries, at the local level, to satisfy the vast majority of everyday information demands generated by the people within the state. The National Program would also assist the states in forming intrastate networks compatible with the one constructed for national use. The state networks would provide local libraries access to required materials in other parts of the state or out-of-state. They would also organize means of delivering the desired materials to the patron (mail, freight, delivery truck, facsimile, cable TV, etc.).

It is the view of the National Commission that any new National Program should rest on the understanding that the federal government would fund those aspects of the National Program that are of common concern nationally, in return for a commitment on the part of the states to accept, in cooperation with the local governments, a fair share of the responsibility for funding libraries within their own jurisdictions. Federal legislation would spell out the obligations to be assumed by the states when joining the National Program, describe the services they would receive in return, and set forth general matching fund criteria for

development of the intrastate parts of the National Program. (cf. Responsibilities of the State Governments, page 89.)

Objective 4. Develop and continually educate the human resources required to implement a National Program.

The development of adequate human resources for library and information service has been one of the Commission's concerns since its inception. In its 1971 Annual Report, the Commission made the point as follows: "It is important that those giving service in libraries and information centers be qualified for their work. Poor help in identifying and locating information is bad for the user and will ultimately damage the organization that provides the inadequate service."

The successful implementation of an all-encompassing nationwide program depends largely on whether or not the staffing and manpower needs of libraries and information centers are adequately met. The program must have people in it who are competent, sensitive to user needs, and able to employ new techniques. The quality of training, the appropriateness of that training to existing and changing conditions, and the attitudes of those who serve can make or break programs and provide satisfaction or discontent among those served.

The domain of library and information science is interdisciplinary. This implies that the personnel required to manage a national program of library and information service should be equipped, technically and substantively, to cope with all aspects of planning and implementation.

Schools of library and information science are aware of the need to redefine their educational programs in order to attract exceptionally qualified students and build the leadership needed to remold traditional librarianship into a dynamic profession. However, no concerted effort has yet been made to bring this about.

It is essential, therefore, that the National Program give consideration to both basic and continuing education of personnel at all levels, professional and paraprofessional. A new approach to educational curricula will be needed in library and information science if librarians, information scientists, library technicians, and auxiliary personnel are to learn to function as an interdisciplinary team. Expressions of need for an innovative approach, preferably an interdisciplinary one, have come from many national, regional and state professional associations, schools of library and information science, state and national libraries, and from librarians, information specialists and their employers. An interdisciplinary approach to education does not necessarily imply that every librarian must immediately become a computer scientist or vice

versa. There are many library operations that can and should continue to be performed in traditional ways. It is essential, however, that all librarians understand the potentials of the new technologies; and this is especially true for those librarians who serve the user directly. Those in contact with the user must understand the capabilities of the statewide or nationwide network with which they are working.

To achieve a technological and organizational upgrading of libraries and information centers will require new approaches to recruitment, manpower development, continuing education, technical training, trustee orientation, and other matters relating to human resources. The federal government has a primary responsibility to ensure that all those who will participate in the National Program are educationally equipped and qualified for their jobs.

Objective 5. Coordinate existing federal programs of library and information service.

The Commission recognizes that existing library and information service programs in operation by the federal government - such as those in the Library of Congress, the National Library of Medicine, the National Agricultural Library, and the 2,700 or more federal libraries and

information centers - constitute invaluable operating programs that are of great significance to the proposed National Program. Many of these programs are already performing centralized bibliographical, reference and other services that are of benefit to all libraries in the country. The National Program will make use of these national services and must ensure that they are continued at levels strong enough to fully satisfy the national need. These existing federal programs would become critically important elements in the National Program, even though they remain administratively autonomous.

As stated earlier (cf. Objective 1, page 54), the Commission believes that existing categorical aid programs should continue to be administered by those mission-oriented agencies that are directly concerned with the substance of a particular problem area. The Commission believes that the variety and extent of operating and grant programs in the federal government are so great that any attempt to centralize them into a single agency might be not only impractical but also unwise. Instead, the Commission proposes to involve the best resources and the best capabilities of all of the agencies of the government that can make a significant contribution to the National Program.

Public Law 91-345, establishing the National Commission, assigns to it the "primary responsibility for devel-

oping or recommending overall plans, and advising the appropriate governments and agencies on ... policy" with respect to meeting the library and information service needs of the people of the U.S. In the proposed National Program the Commission would exercise this responsibility through the development of national policy, coordination of existing programs, and creation of new programs as appropriate.

Objective 6. Make the private sector an active partner in the development of the National Program.

The private sector - including the publishing industry, the information industry, the indexing and abstracting services, the audiovisual industry, the special libraries in business and industry and in the arts and humanities, etc. - are initiating new types of information services. Many of these services employ unconventional products which derive from applications of the new technology, such as: microfiche, video cassettes, on-line computerized data banks, facsimile transmission, and CATV. In other cases, the new services represent innovative extensions of past practices. Taken together, these new commercial or private non-profit information services are growing rapidly in number, function, and value.

Some users, realizing that information is a commodity with an economic value of its own, are paying for the information they receive as they do for the purchase of any other product. This practice of paying for information service is a recent development, and in areas like science, technology, and business, the use of commercial information services is gradually being accepted as a reliable and cost-effective method of obtaining information.

Unlike libraries, information facilities in the private sector have thus far received little assistance from the federal government to help strengthen their ability to serve more people. Although some research and development funds have been made available by the government to the private sector for exploring information uses of the new technology, no national rationale exists for incorporating these valuable services into the functional information structure of the country.

Objective 7. Establish a locus of federal responsibility charged with implementing the national network and coordinating the National Program under the policy guidance of the National Commission.

The National Commission is a policy-making and planning body. It is not empowered by law to operate or

implement programs. What is needed, as a matter of first priority, is a locus of federal responsibility, some agency in the federal establishment, where policies with respect to library and information service activities can be translated into action. Such an agency's initial responsibilities would include: implementing a nationwide network, coordinating the National Program, and putting into practice related policies enunciated by the National Commission. It would also have authority to make grants and contracts, establish standards and encourage their adoption, and undertake other functions consistent with the Commission's policies to implement a program of national concern.

One of the most important issues to be resolved in pursuing a National Program of Library and Information Services is deciding what kind of permanent operating agency is required at a federal level for this purpose and recommending where the agency should be located in the government.

It may not, strictly speaking, be necessary to create a new federal agency. It may be that the proposed functions of the National Program could be assigned to several existing agencies merely by broadening their responsibilities. The important thing is that the new National Program will require new administrative and operational functions and that, at present, there seems to be no natural home to

accomodate them. The Commission firmly believes that the responsibility of the agency, whether old or new, should be neither all-encompassing nor authoritarian, nor prescriptive, nor regulatory, but rather that it should be supportive and coordinating. This agency is seen as one that would encourage cooperative efforts at every level and that would coordinate backup national services. It would have no control whatsoever over the content of the information flowing over the nationwide network. It would, however, be backed by legislation to enable it to obtain the necessary funding from the Congress for meeting the crucial needs of the National Program. It dards for nationwide compatibility as a condition of continued funding.

Whatever central authority is eventually established to direct the national program local autonomy and the maximum degree possible of local self determination should be one of its major tenets. The variations of needs and existing levels of services and resources are so great that it would be difficult for a central authority to be fully cognizent of the diverse needs of all.

It is not yet clear where an agency responsible for library and information service belongs in the organizational hierarchy of the federal government, or whether there is an existing agency to which this role would be appropriate. Three existing national agencies have been

mentioned as possibilities:

1. The Library of Congress
2. The Division of Library Programs, U.S. Office of Education, and
3. The National Commission on Libraries and Information Science

Recognizing the importance of the relationship between the proposed program and the private sector, some people have suggested that the new responsibilities and functions be assigned to a quasi-governmental agency organized along the lines of the Corporation for Public Broadcasting.

It is far from clear at the moment what the best solution might be, and the Commission, therefore, feels that these and other alternatives should be thoroughly investigated.

The Commission can not stress strongly enough the urgency attached to finding a suitable home in government for planning, developing, coordinating, and integrating library and information service on a national scale.

Objective 8. Plan, develop, and implement a nationwide network of library and information service.

The National Commission believes that only by interrelating the pluralistic cooperative programs of the past and providing a national frame of reference for future

development will the nation be able to achieve optimum exploitation of the rich information and knowledge resources in the U.S.

The next section describes the main elements of the proposed nationwide network whose purpose, as indicated earlier, is to tie together information systems at all levels: federal, multistate, individual state, and local, as well as compatible systems found in the private sector. The aim is to permit rapid delivery of needed services and materials to people in all jurisdictions without artificial institutional or geographic constraints.

Meeting the above eight priority objectives constitutes the sum of the Commission's proposed program. It attacks problems and deficiencies on a broad front and provides a comprehensive approach toward their solution. In some instances, existing programs would be strengthened or reoriented. In other cases the Commission would initiate new programs - such as the nationwide network. To bring this all about will require new legislation. This legislation would: define the total program, assign responsibilities and functions within the federal government to relevant agencies, provide necessary authorizations, and recommend multi-year appropriations commensurate with program requirements.

THE NATIONWIDE NETWORK CONCEPT

Major Federal Responsibilities

A nationwide network of libraries and information centers means a single, unified system encompassing state networks, multistate networks, and specialized networks in the public and private sectors.

The federal government would force no library or information service to join the network, but it would provide technical inducements and funding incentives to state governments and the private sector to strengthen their ability to affiliate.

At first, network affiliation is expected to occur organizationally through formal agreements or contractual relationships among groups of libraries and other information facilities. But later, the federal government would provide financial and other incentives to the states and to the private sector to enable them to achieve working interconnection. The government would assume responsibility for the interstate portion of the network's activity. It would collaborate with the professional societies in developing interstate technical standards and it would support the introduction of computer and telecommunications facilities as needed for interstate purposes. The commercial communication carriers are already building up their capacity to handle the type of traffic which is expected to flow over a nationwide network of libraries and information centers.

The National Program here advanced sees the national network as a flexible and evolving confederation of information resources. The government's role in building the network would be to: encourage the development of networks within and between the states, help establish and encourage the adoption of common technical standards, introduce computers and telecommunications for interstate use, and help establish protocol governing the way requests and other transactions are handled by the network. The following pages discuss major federal responsibilities as identified by the National Commission.

1. To establish standards. Without doubt, an essential function to be performed by the agency responsible for implementing the nationwide network will be that of encouraging and guiding the development and adoption of common standards and common practices, adherence to which is implicit in system's design and implementation of a nationwide information network. These standards include those required to assure interconnection between intrastate networks, multi-state networks, and specialized networks in the public and private sector.

The importance of establishing standards at the national level cannot be overstated. It is the principal method for achieving economies of scale and reducing duplication among libraries and other members of the

information community. Current research in computer networking clearly indicates the need for standards covering a variety of areas including computer hardware and software, access protocols, data communications, data standards, data elements and codes, and bibliographic standards. Careful attention to standards problems and requirements at the design stage can significantly reduce the incompatibilities and interconnection problems that arise when independently developed systems are integrated into a coherent operating network. The establishment of standards late in the network development process would be disruptive, costly, and frequently ineffective.

The Institute for Computer Sciences and Technology (ICST) at the National Bureau of Standards has government-wide responsibility for developing mandatory Federal Information Processing Standards and for coordinating federal participation in the development of voluntary computer standards, mainly through the American National Standards Institute (ANSI). The ANSI standardization program encompasses the development of standards and guidelines in a broad selection of areas, including computer software, data elements and codes, software documentation, computer security and controlled accessibility, computer networking, computer system performance measurement and evaluation, magnetic media, data communications, and computer hardware. Although much of the Institute's technical program is

conceptually relevant to the concerns of the National Program, it would appear that the outputs of the current program do not fully satisfy the requirements of the entire information community. Much more needs to be done, in both the public and private sectors, if the more generalized standardization problems are to be satisfactorily solved.

In addition to having technical standards, such as those relating to hardware and software, a nationwide network of library and information service will also need to strive for common bibliographic standards. The most powerful force for bibliographic standardization in the U.S. is the MARC-II format developed by the Library of Congress. The format has proved so useful that it has already been accepted as a standard by the American Library Association, the American National Standards Institute, and the International Standards Organization.

Aside from bibliographic standards for monographs and books other areas are in need of standards for their future uniform development. For example, bibliographic standards must be provided for maps, pictures, films, computer tapes, sound recordings, etc. The Association for Educational Communications and Technology (AECT) has already issued a publication entitled "Standards for Cataloging Non-Print Material" and the Library of Congress has work in progress to extend the MARC program to include the new media.

Standards are also needed for patents - a basic source for scientific and technical information - and for the journal article - a bibliographic entity which is of primary concern to abstracting and indexing services.

The commercial and not-for-profit indexing and abstracting services do not yet possess a common approach to bibliographic control. In order to achieve the goal of national interchange of bibliographic data over on-line computer/communication systems, and to reduce the hazards of duplication of effort, it is imperative that this community take steps now toward the adoption of standards.

In the same vein, scholars working in the humanities are gradually building libraries of machine readable texts. A large number of these literary texts exist in computer form already. If they are to be used efficiently by scholars in the future, plans must be laid now to develop them according to standard procedures and conventions. Agreement has been reached in the bibliographic world on a standard computer character set - such as the letters, the diacritical marks, numerals, punctuation, and special symbols - but more remains to be done to assure uniform adherence to these conventions by librarians and humanists.

At a Conference on National Bibliographic control in April, 1974, representatives of the public and private sector were unanimous in their agreement that a national system of bibliographic files is an essential part of a

national bibliographic system. They recommended that these files be in a standard machine-readable format and that the data base contain "...certain records which will provide for the unique identification of each item and will list appropriate locations of each."(6) The Commission firmly believes that unless common bibliographic standards are agreed upon along the lines of this recommendation the nation will face a form of information chaos within the next five years.

And finally, standards are needed in the areas of reprography and micrographics. Although a number of useful standards already exist, there are a great number of examples of non-standardization which users currently endure. For example, there is no universal microfilm cartridge on the market that is compatible with all available equipment. Considering that more than two hundred companies are engaged in manufacturing microfilm equipment and services, the development of standards is at best a difficult chore. However, if microfilm is to become a dynamic medium in library operations, then users, producers, and groups like the National Microfilm Association and the American Library Association, must work together to standardize its adaptability to information functions.

It appears that reasoned and effective standardization is the best way, if not the only way, to obtain maximum

national benefit from electronic networking and new information formats. If there is to be the level of hardware, software, and bibliographic standards required for nationwide networking, full and active community participation in developing these standards is mandatory. A very high percentage of the total input to libraries is now and will continue to be provided by the private sector. Technical and bibliographic standards will control both the form and the content of this input. All computer-readable data, as well as all microforms, will be impacted by these standards. A higher degree of expertise than is currently available in any one sector will be required to set these standards. The federal government, therefore, has a responsibility to encourage and support present and future standardization efforts, both in the public and private sectors, and to provide for the coordinated development of new standards as they are needed. The responsible federal agency would view the promulgation and enforcement of standards as one of its major and most important functions.

2. To make unique national collections available nationwide. The new network would make unique information collections available nationwide. The Commission recognizes that there are many institutions in the country, in both the public and private sectors, whose collections include one-of-a-kind resources of general interest and potential benefit for the entire population, e.g., the comprehensive

research collections of Harvard University, the New York Public Library, and the Newberry Library, or less well known but singularly important, the Glass Information Center in Corning, New York, the Chemical Abstracts Service in Columbus, Ohio, and many others. The responsible federal agency might identify means for protecting unique institutions like these and be authorized to provide incremental funding to enable them to serve more people than their primary clientele. To achieve this, the federal government would offer to compensate such institutions for performing added services. The institutions, in turn, would have the option of accepting or rejecting a national responsibility for developing and sustaining their particular collections.

Undoubtedly, charges will have to be levied for the use of some unique collections. When such compensation is required, appropriate fees and payment methods will need to be devised.

3. To develop centralized services for networking. A similar responsibility of the federal government would be to sponsor and support centralized bibliographic and other services in the public and private sector when it can be clearly proven that such central services would benefit a majority of libraries and information centers economically.

Examples of potential services that may offer considerable economies of scale include a national audiovisual

repository, a national system of interlibrary communication, or a national periodical bank. The National Library of Medicine (NLM), for example, is already the "library of final resort" for medical periodicals not held elsewhere in the country. However, resolution of the copyright problem will be required before a periodical bank of wider scope could be planned for the nation.

In the humanities, there already exist data banks of abstracts of articles in a variety of fields. The major organizations concerned with producing these data banks are the Modern Languages Association, which covers the study of languages and literature in all languages currently spoken and the Répertoire de la Littérature Musicale (RILM), which is abstracting articles from all musicological journals in the world. Both of these operations accumulate large stores of humanities-related abstracts intended specifically for computer retrieval. There may eventually exist a need to combine these and other data banks for cross-disciplinary research in the humanities. In time, this could lead to the development of a centralized computer retrieval service for the humanities available through the nationwide network.

The Commission, of course, recognizes that some functions are better performed locally than centrally. However, in many areas of the country some institutions are wastefully duplicating effort, performing repetitive processing, storing similar materials beyond those required to satisfy

local everyday demands, and giving imcomplete or limited services to the public because of the lack of centralized services. Existing national services that currently serve the library and information community at large, such as those provided by the Library of Congress, would be reexamined and either modified or incorporated intact into the National Program. Others that are needed would be initiated by the federal government.

The criteria to be followed in designating national collections and services or in recommending their establishment de novo will need to be carefully articulated in proposed legislation.

4. To explore computer use. Computer technology is another very important part of the design of a future nationwide information network. Computers will eventually become indispensible tools in the operation of such a network.

Today, libraries use computers mainly for everyday business tasks: catalog card production, circulation control, book ordering, serial records, and other routine library functions. Aside from these applications, research is also being pursued by libraries to find ways of using the computer for information retrieval to answer library reference questions; a number of libraries, in fact, have already begun to search computer bibliographic data bases. Libraries of the future might be expected to have the full

text of certain materials stored in a form readable by machine.

The nationwide network may require several computer installations for centralized processing to help transform the machine-readable bibliographic records produced by the Library of Congress and other national libraries into forms (such as cards, book catalogs, special bibliographies, selective dissemination of information (SDI) services, etc.) suitable for decentralized use in each state. For each state, or each library, for that matter, to operate a large scale computer installation would be prohibitively expensive in most cases. The cooperative, time-shared, multi-institutional approach to computer usage, supported by the Commission, appears as the most economic and efficient solution.

Computer installations in the nationwide network would carry out three functions: the first, dedicated to bibliographic production (the processing of machine-readable tapes produced by the national libraries into by-products required by the local institutions); the second, devoted to service uses (recording holdings, making referrals, managing interlibrary loans, searching data bases, performing interactive searches of bibliographic and abstract files, etc.); and the third, related to the management and accounting function of network operation including inter-system payments to suppliers, of information. The existence

of several computer centers for interstate use in the network will not offset the need for some libraries to maintain their own computers - probably dedicated mini-computers - to satisfy local internal processing needs. In fact, the mini-computer may eventually become a distinct and direct functional component within a national communications and computer network. Computers at the interstate level of the national network would probably be a set of large, fast, time-shared computers with transmitting and receiving terminals in the member institutions.

5. To apply new forms of telecommunications. Since the main purpose of a nationwide network is to place the user in contact with his materials, ways of speeding up the delivery of information constitutes one of the more important aspects of the network concept. A nationwide network must incorporate appropriate means of communicating rapidly and effectively with the facility at which the desired material is located. It is in regard to the techniques which allow optimal interconnection between user and resource that the greatest change in current thinking and practices will be required.

Of all the different kinds of equipment used by libraries for interlibrary communications, the one which has received widest acceptance as a low-cost practical tool is the teletype machine. Teletype communications between and among libraries exist in both informal and

formal network configurations. They are generally used to augment library holdings on a reciprocal basis, to provide for general communications with other libraries, to serve as a channel for querying union catalogs, and to accommodate reference questions and services. Business, industry, and goverrment also utilize teletype for exchanging information.

A future telecommunications system used for a nationwide information network will eventually need to integrate teletype, audio, digital, and video signals into a single system. This concept is an important aspect of the design of a modern communications system for information exchange. "Integrated telecommunications systems" became practical only during the past few years, and commercial and governmental efforts are underway to provide these unified facilities on a large scale. Within the next few years, domestic communication satellites will be operating in the U.S., thus further enlarging the nation's capability to exchange information in all forms.

Although distribution of documents from, say, holographic or microform collections through electrical channels to individual libraries or even directly to the user will soon be technically feasible, the bulk of information will, most probably for a long time to come, be transmitted over regular communication channels such as mail, parcel

service, Greyhound Bus, rail, bookmobile and other means. Even though at the present time many commercial telecommunication companies are upgrading their lines, it would appear that the regular costs for library and information telecommunications would still be too high, and that an exception to the federal telecommunications regulations may be needed to guarantee reasonable rates for interstate information exchange.

The Commission believes that rapid and inexpensive telecommunication among members of the nationwide network could turn out to be the greatest boon ever to the national distribution of knowledge for education and progress. For this reason, the responsible agency would be directed to explore all possible avenues leading to reasonable communication rates for library and information networking purposes. First, as an interim step, the possibility should be explored of incorporating this type of communication into the normal Federal Telecommunications System (FTS). In this case special legislation may be necessary to authorize interstate use of the FTS system free of charge or at a reduced rate. Second, approaches might be made to the Federal Communications Commission (FCC), or the National Aeronautics and Space Agency (NASA), for permission to use satellite communication channels, at first for experimental purposes, and later for regular

traffic. Or, alternatively, the cost of interstate communications could be borne by the institutions that use the network, either by being subsidized directly by the state or federal government, or through charges levied against the individual user.

Many European countries have already begun to provide communications links at lower tariff rates in order to influence and stimulate the development of national information systems.

The United States government is in a position to give the whole nationwide library and information network an initial impetus by subsidizing low-cost rates until such time as the entire scheme reaches a level of usage that ensures its economic viability.

6. To support research and development. Transforming the nation's heterogeneous information facilities and services into a nationwide network will pose many new problems. Some of these problems will arise from the application of the new technology, some will derive from the effects of new information systems on users, and others will originate with the profession itself as it struggles with the dynamics of change.

A federal program of research and development, through grants and contracts, can provide an overall framework within which common investigations can be carried out. By concentrating specialized skills on crucial common

problems, the federal government will help reduce duplicate and costly piecemeal research that would otherwise be performed by the states and, at the same time, greatly accelerate the rate at which new methods and equipment can be transformed into operating systems.

For example, a federal policy should be ennunciated that encourages and facilitates the development of telecommunication technology and services especially suited to interlibrary communication.

The Commission believes that a vigorous federal research and development effort is essential. At present, the Office of Science Information Service of the National Science Foundation (OSIS/NSF) is the principal component of government responsible for information science research. Its research programs are carried out in close cooperation with higher education, industry, and professional associations. Although OSIS/NSF research programs are generally concerned with the investigation of problems in the field of information science and problems of research libraries, methodologies and techniques developed for these specific purposes could be transferred to and used to good advantage in other fields. If the OSIS/NSF research and development programs were further strengthened and conducted in close collaboration with the National Program, they would most certainly yield many new insights into network organization standards, economics, technology, access, and use that

would help accelerate the implementation of a national network of library and information center activities.

7. To foster cooperation with similar national and international programs. In recent years, computer and communications technology have made the concept of a worldwide information network a practical reality. As a result, many countries are trying to articulate their plans for national information programs with broader international plans.

Through the good offices of UNESCO, productive efforts are underway to achieve technical compatibility among national information systems in order to ensure that future international exchange of information will occur efficiently.

The U.S., through the National Science Foundation, already supports UNESCO's UNISIST program, which is directed toward the more systematic development of international information services. The U.S. also participates actively in the information activities of the International Standards Office, the Universal Copyright Convention, the International Federation of Library Associations, including its principal objective of Universal Bibliographic Control, the Organization for Economic Cooperation and Development (OECD), the Federation Internationale de Documentation, and other related programs.

There are also some new developments in international standards that hold great promise for electronic processing

of original input of bibliographic data, such as International Standard Bibliographic Descriptions for monographs and serials, proposed by the International Federation of Library Associations (IFLA) Committee on Cataloging. Final agreement on the precise terms of these standards should bring about substantial benefits to both libraries and users.

Americans need access to foreign publications and information, and vice versa. A worldwide network may someday enable people of any country to tap the knowledge resources of the world. A step closer to the attainment of this ideal can be taken if the proposed National Program supports a strong leadership role for the U.S. in the evolution of compatible information systems and networks throughout the world.

Figure I depicts the organizational relationships among government agencies and the private sector as envisioned for the National Program by the Commission.

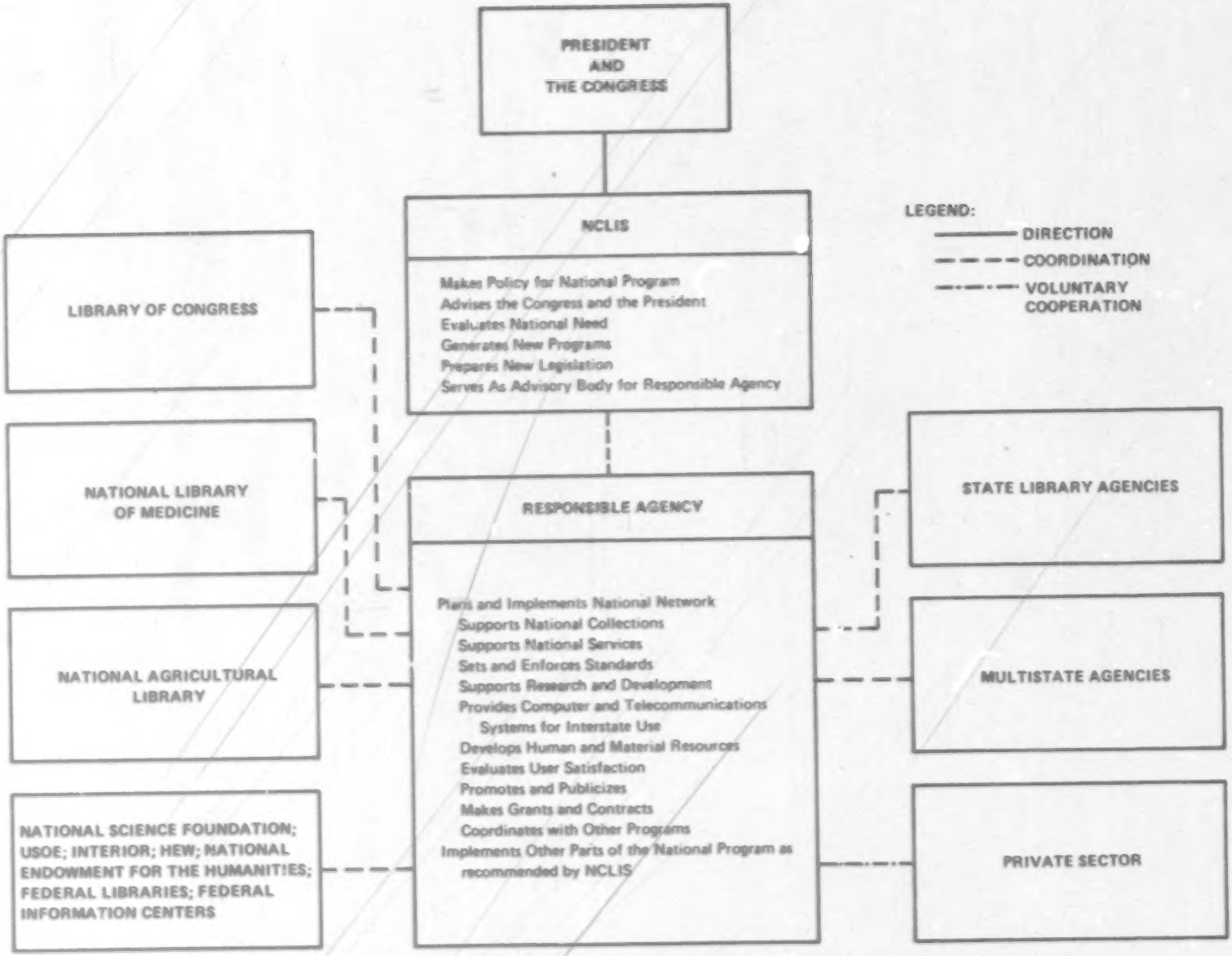

FIGURE I. THE PROPOSED NATIONAL PROGRAM OF LIBRARY AND INFORMATION SERVICE

Supporting Responsibilities

In addition to the executive branch of the federal government, there are three other key components in the proposed national network which are crucial to its success. First there are the fifty states, all of whom have resources to contribute to the network and requirements to be filled by the network. Second, there is the Library of Congress, which is the keystone of the nation's bibliographic system and is uniquely able to perform centralized services vital to the network. Finally, there is the private sector, which contains a multitude of old and new information services that fulfill a large part of America's daily demand for information.

Responsibilities of state governments. National goals in the field of library and information service cannot be achieved unless there is careful articulation between local, state, and multistate planning and national planning. It is the Commission's view that each of these levels in the nationwide program should bear its share of the total financial burden. The federal government would fund those aspects of the program that support interstate objectives, are of common concern nationally, and stimulate statewide library development needed to support the national program. The state government would accept the major share of the cost of coordinating and of supporting the intrastate components of the network, as well as a part of

the cost of participating in multistate planning operations. Each state has the responsibility to develop and sustain its own statewide program of library and information service. Such a program must commit the state to provide funding or matching funding for development of resources and services, including special forms of statewide network assistance and specialized services. If this type of quid pro quo philosophy were adopted, and if incentive formulae were worked out to make local, state, multistate, and national financing mutually reinforcing, then a nationwide network could grow from the bottom up. To achieve this goal, however, requires that the responsibilities of the various levels be well defined, that financial obligations be clearly recognized and that legal commitments be made possible through appropriate statutes. Some states may decide to provide funding for the further development of library and information services within the state, while other states may elect to share funding with local governments.

It would be an important advance if the states would elect to prepare and/or update corresponding legislation setting forth statewide programs of library and information services and specifically committing individual states to provide funding and matching funding.

Responsibility for fostering the coordination of library resources and services throughout a state has usually been assigned to a state library agency or to another agency with the same legal authority and functions. This agency is the natural focus for statewide planning of cooperative library and information services and for coordinating statewide plans with those of the federal government. Such agencies should solicit the widest possible participation of library, information, and user communities. Several states like Illinois, Washington, and New York already have operational systems or networks that are in harmony with the Commission's program. The fifty states, however, must make a firm commitment to continuing support and funding of library and information activities at a level commensurate with the needs of their constituents.

State library agencies have a major role to play in the development of a nationwide program of library and information service. Many of these agencies now serve a significant planning and coordinating function in their respective states or in a multistate complex. Therefore, they should be considered partners by the federal government in developing and supporting useful patterns of service. Among the benefits that could accrue from such a partnership are greater possibilities for compatible programs and sustained funding through mutually supportive efforts.

Proposed federal legislation in support of library and information services must recognize that the states are at varying stages of developing their services; some states have not yet initiated plans, and others are in the early stages of planning, while still others are already implementing sophisticated programs. Some states have networks organized by type of library, others have networks that include all types of libraries, and still others have networks that include information agencies as well as libraries. Federal-state funding formulae must, therefore, be devised that will take into account these differences among the states and provide the means for supporting various levels of development.

Some of the advantages that would accrue to a state through its affiliation with and participation in a nationwide network are as follows:

1. It would enable a state to get more information for its residents than it could possibly afford to amass through its own capital investment by providing them with access to the total information and knowledge resources of the country.
2. It would enable a state to receive reduced-rate interstate telecommunications services through the federal telecommunications system or commercial channels. This asset alone would be worth participation, because it represents a share in a very sizeable federal investment.

3. It would enable a state to receive computer software, computer data bases, technical equipment, and other materials which derive from the federal government's library and information science research and development programs.
4. It would ensure that the state's internal network plans are developed in harmony with federal plans and thus reduce the possibility of large-scale modification costs in the future.
5. It would enable a state to receive matching funding from the federal government to provide incentives for bringing state and local collections and services up to national standards.
6. It would enable a state to receive matching funding from the federal government to initiate network operations within the state at levels consistent with the time-frame and scope of the national network.
7. It would enable the state to spend its library dollars optimally by investing mainly for general state and local needs and relying on the nationwide network for additional specialized materials, for interstate services, and for other services of common concern.

Multistate groups are forming in different parts of the country to provide a mechanism for planning a regional

network program among several states. Such groups are usually organized when two or more states decide to pool their financial and other resources for a specific purpose, i.e., for developing an all inclusive library and information program. Some multistate groups are created by interstate compact, some are incorporated, and others function less formally. Where a legal entity does exist for a multistate group, the participating states must decide how financial support from the federal government will be channeled to the new organization.

Figure II is a table comparing the National Program functional responsibilities of the federal government to those of state governments.

Responsibilities of the private sector. Libraries and other information activities exist in the public and private sectors. Those in the private sector are part of a large, diverse, and rapidly growing information community comprising: publishers, indexing and abstracting services, the data base industry, information analysis centers, the audiovisual industry, reprint companies, information subscription agencies, on-line computer retrieval services, and many others. Included in the private sector are profit-making and not-for-profit organizations. Among the latter, for example, are the professional societies, such as the American Chemical Society, the American Institute of Physics, and other professional groups in the sciences and

FUNCTION	FEDERAL	STATE	PRIVATE SECTOR
GOAL	To foster cooperative programs within each state and among states by providing federal funding to inaugurate or continue intertype networks at appropriate levels, to demonstrate and test and evaluate them, to support them with technology and to help them move toward financial self-sufficiency.	To develop networks of library and information resources within the state with federal and state funds expressly earmarked for this purpose within the first three years of the law, and provide for interfacing the intrastate networks with multistate and national networks of all types.	
FUNDING	To continue funding and aid in the establishment and improvement of basic library and information services.	To engage in funding programs which ensure that local requirements for materials and information services sufficient to meet the needs of their constituencies are indeed met.	
PLANNING AND COORDINATION	To coordinate the Federal Program with the states and with multistate groups.	To establish and maintain mechanisms for coordinating state programs with federal and multistate programs.	
NETWORK DEVELOPMENT	To create a federal library and information network that will make available the information resources of federal agencies directly to the states.	To create a statewide library and information network that will make available the information resources of state government agencies to the local level and to coordinate and develop access mechanisms to the resources of a region.	
BIBLICGRAPHIC SERVICE	To establish and/or support those bibliographical services of nationwide concern that are best carried out on a centralized basis.	To provide means by which national bibliographic services may be used within the state or among states.	
UNIQUE SPECIAL COLLECTIONS	To designate and help sustain unique, national collections and access mechanisms that all states may use as back-up to their own resources.	To designate and sustain for service to the people of the state major collections and access mechanisms for wider internal use and greater self-sufficiency within the state.	
STANDARDS	To establish and promulgate technical standards and to facilitate interconnection across state lines.	To develop means for erasing artificial barriers to cooperation. To support and monitor observance and implementation of standards set by the National Program.	

FIGURE II. A COMPARISON OF FUNCTIONAL ROLES IN THE NATIONAL PROGRAM

FUNCTION	FEDERAL	STATE	PRIVATE SECTOR
COMPUTER SUPPORT	To help each state establish computer support services for technical processing and public service purposes.	To produce and/or provide access to union lists, cumulative indices, directories, and other bibliographic tools to support rapid identification, access, and referral with the state. To coordinate and assist in developing computer support for individual library processing.	
TELECOMMUNICATIONS SUPPORT	To provide telecommunications at low tariff rates, for interstate library and information exchange.	To foster and facilitate low cost communications between and among libraries and other information facilities within the state.	
RESEARCH AND DEVELOPMENT	To perform and/or support research, development, and evaluation in areas of nationwide concern or potential; to monitor developments in library and information services; and to disseminate information relating to the above activities.	To perform and/or support research, development, and evaluation in areas of statewide or multistate concern or potential; to monitor developments in library and information services; and to disseminate information relating to the above activities.	
EDUCATION AND TRAINING	To fund education and training programs in modern library and information science through fellowships, intern programs, etc.	To provide guidance to federal and state authorities in the development of educational standards, the definition of needed skills, and the installation and evaluation of feed-back mechanisms. States alone or in cooperation with other states have a responsibility for continuing education.	
PUBLICITY AND PROMOTION	To plan and carry out programs to inform potential users of the services available through the national network and to actively encourage the use of these services.	To plan and carry out educational and promotional programs tailored to the state and region.	

FIGURE II. A COMPARISON OF FUNCTIONAL ROLES IN THE NATIONAL PROGRAM (Cont.)

in the social sciences which process and disseminate information for the use of their members and colleagues. Most of the large scientific and technical data bases in the country, such as those in chemistry (Chemical Abstracts), biology (Biological Abstracts), aerospace (International Aerospace Abstracts), and in engineering (Engineering Index), originated in the private sector and constitute the research foundation of their respective fields.

As with various types of libraries in the public sector, information organizations in the private sector are growing without any national coordination. At present, the information companies and organizations in the private sector operate independently or through their respective trade or professional associations. The indexing and abstracting services are attached to the National Federation of Abstracting and Indexing Services; publishers are affiliated with the Association of American Publishers; information entrepreneurs are part of the Information Industry Association; information specialists are members of the American Society for Information Science; and business and industrial librarians are allied with the Special Libraries Association.

There currently exists very little information about the elements constituting the private sector as a group. Some initial insights were provided to the Commission by

the Special Libraries Association, the Association of American Publishers, the Information Industry Association, the American Society for Information Science and other parts of the private sector. The Commission believes it is vital to articulate a role for the private sector in the proposed National Program and to more fully appreciate their capabilities and concerns. Much of the success of a nationwide program will depend on knowing what information is available where, and how to gain access to it. To the user, information is information, and the distinction of its location in the public or private sector is irrelevant.

Therefore, the proposed national network should be designed with enough flexibility to allow it to accommodate the wide range of information resources and services in the private sector. Incorporation, for example, of access services currently available from private sector companies to such data bases as Chemical Abstracts or the New York Times Information Bank, as well as to government data bases like MEDLINE (National Library of Medicine), CAIN (National Agricultural Library), ERIC (National Institute of Education) and NTIS (U.S. Department of Commerce) is, therefore, imperative. Unless the network can coordinate access to information in both sectors, it will be unable to provide the many kinds and levels of information service required by present and future users.

There are also some basic policy questions to be resolved: (1) How can the federal government stimulate the growth of the information industry? (2) Which information functions should be performed by the federal government and which by the private sector? (3) How should the country's pluralistic information system develop to function most effectively for the user? (4) What principles must be observed in the proposed National Program to ensure the economic viability of commercial and not-for-profit information producers and services?

Facilitating the active participation of the private sector in the development of a national information system may require legislative authority to permit this sector to work more directly with the federal government than is the case now. A new orientation to federal funding and user economics may also be required to harmonize the traditional library information systems with the newer information services.

The role of the private sector in a national information program is not yet articulated. The Commission believes this area will require intensive study and full collaboration with many different organizations before a meaningful legislative recommendation can be developed. (7)

Responsibilities of the Library of Congress. Among the national facilities with which the Commission is concerned, the largest and the most important to the success of the

proposed National Program is the Library of Congress. Because of its size, stature and comprehensive collections, the Library of Congress is the hub of the nation's bibliographic apparatus for monographs and serials. The National Library of Medicine and the National Agricultural Library complement the Library of Congress by specializing in their respective fields. All three libraries play a vital role in the library and information programs of the nation. Although the Library of Congress is not officially designated as a national library, it is de facto a national library; it performs many common processing services and provides many user services for libraries throughout the country. It receives and catalogs the bulk of the same titles received by other American libraries and the intellectual work which it does centrally obviates the need for local duplication. The National Union Catalog, the Card Distribution Service and the MARC (Machine Readable Catalog) Program, which includes making current cataloging information available on magnetic tape, are prime examples of the central work done by the Library of Congress which accrues to the benefit of most American libraries.

The participation of the Library of Congress is crucial to the development of a national program and to the operation of the nationwide network because it has the capacity and the materials to perform many common services in both the areas of technical processing and reference and

because it can set national bibliographic standards for the program. New legislation may be needed to designate the Library of Congress as having responsibility for integral aspects of the National Program.

The Commission believes that the Library of Congress, in its role as a national library, should accept the following responsibilities in the National Program:

1. Expansion of the lending and lending management function of the Library to that of a National Lending Library of final resort. The Library of Congress has loaned some of its materials to other libraries for many years. In the development of a national system of information resources, there will be complexes of collections organized for sequential service levels. Loan of library and information materials will, in some cases, have to come from the most comprehensive collection, that of the Library of Congress. To fulfill this requirement for backstopping the other significant resources in the nation and to do so without infringing on the need to protect its collections for future use will require extended new arrangements. Such arrangements will incorporate the purchase of some materials for loan and, in some cases, the use of microforms to produce simultaneously a preservation copy and a print copy for

loan. Development and management of the components of this extended service including arrangements for added collections, a new system of interlibrary communications, a new mechanism for obtaining copyright permission, and improved document and text delivery techniques will be required.

2. Expansion and fulfillment of coverage of the National Program for Acquisitions and Cataloging (NPAC). This program, to acquire, catalog quickly and disseminate cataloging data rapidly for all current works of research value, has been progressing for over six years. In that time the percentage of materials acquired and cataloged from all sources to meet the expressed needs of the library and research community of the United States has climbed from fifty percent to seventy-five percent. The Commission believes that the Library of Congress should seek to acquire, catalog and process for current and future use a larger percentage of the world output. With the expenditure of approximately $15 million per year by the Library of Congress for such a purpose, it is estimated that there would be a fourfold national saving for research libraries alone as well as additional significant national benefits.

This is the kind of economy of scale that a coordinated National Program could bring about.

3. Expansion of machine-readable cataloging (MARC) to include cataloging in substantially all languages of current monographic, serial, and other significant library and information materials being acquired by the Library of Congress; distribution of this data base, perhaps to regional centers and other national network nodes for library and information service. This project, to extend what has already become a landmark service for the public, university, and research libraries, and information centers of the nation, is essential for the effective operation of the bibliographic apparatus of the Library of Congress and other research libraries and information agencies. The task of maintaining bibliographic control of the increasing amount of significant library and information materials that is acquired by the Library of Congress is best accomplished using automated methods. Improved access to these materials cannot be provided without the application of computer processing to a machine-readable cataloging record.

4. Distribution of bibliographic data through on-line communication. With the promise of acquisition and

cataloging of most of the significant publications of the world, including serials, the potential of a complete machine-readable data base can be fulfilled if a central organization speeds the products of these services to the user through his library and information service network. Full utilization of the technology of on-line access and distribution networks must be accomplished as early as the technology makes this economically possible. Some of the products expected are automatic creation of local machine-stored catalogs of local or remote collections, custom-made bibliographies from large data bases, intercoupling of user requests with current cataloging to eliminate delay in availability of recently acquired items, and remote instantaneous delivery of very recent cataloging production.

5. Development of an expanded general reference program to support the national system for bibliographic service. This would include faster means of communication with other libraries, particularly when the Library of Congress may be the sole source in the nation for the needed information. It would also include an expanded, rapid-response referral service to other sources of information.

6. Operation of a comprehensive National Serials Service that will integrate and expand the present serials activities of the Library and provide an organized set of serial services for the nation. Serials constitute the greatest number of individual items in many libraries. Their ordering, receipt, cataloging, indexing, servicing, and preservation consume a sizeable portion of the budget and considerable staff time. National efforts can substantially benefit all libraries and make their work with serials more effective and less costly and improve the accessibility of serial literature to users.

7. Establishment of a technical services center to provide training in and information about Library of Congress techniques and processes, with emphasis on automation. The center's training program would answer the demand for a more detailed knowledge of LC's technical services than can be otherwise gained. It would be developed gradually, would be flexible, and would offer specialized instruction to meet particular needs. The center's information program would be two-way, seeking information from other libraries as to their needs and, concurrently, providing them with up-to-date information about LC's technical services. Its

staff would make possible expansion of present programs involving communication, consultation, technical institutes, and publication.

8. Development of improved access to state and local publications and cooperation with state and local agencies to standardize cataloging and other techniques of organization. Potentially useful information in state and local governmental publications is not now widely accessible to users because it is not uniformly printed, collected, announced, organized, preserved and publicized.

9. Further implementation of the national preservation program. The physical deterioration of library materials, particularly those printed on paper produced since the middle of the nineteenth century poses increasingly critical problems for libraries. The solution to this problem lies partly in increased research in preservation methods. Inasmuch as the Library of Congress has already mounted an important effort in this area, a further modest increase would speed the time at which viable solutions are available. Additional funds for restoration of rare materials and the transfer of deteriorated materials into microform are equally important. Funds are also essential to train the added conservators and preservation

specialists needed to retain the record of civilization housed in the Nation's libraries.

Proposed Legislation

Future legislation will have as its objective the nationwide network and will outline the role of the federal government, the national libraries and the states in its development and implementation. It will also specify the functions that should be performed centrally; it will establish the basis for appropriate federal-state and state-local matching funding to guarantee a continuing federal and state investment; it will establish a locus of federal responsibility for implementing the policies and programs of the National Commission and, it will provide a framework for active private sector participation. Finally, legislation must safeguard the various aspects of privacy, confidentiality, and freedom of expression. The Commission's intent is to create a program that is going to enforce, enliven, and enspirit this country's creative powers, so that more can be achieved with our total intellectual and knowledge capacities. The Commission sees the National Program as a force for productivity and creativity, and not as an authoritative and inhibitive constraint that would control the behavior of people.

FUNDING

Beginning in 1956, with the passage of the Library Services Act by the Congress, the federal government has gradually assumed responsibility for substantial programs of financial assistance to libraries. There are some who view the continued financial support of libraries by the federal government with alarm because of the implied fear that the bureaucracy will sooner or later stifle intellectual freedom. Certainly, the availability of government money for libraries during the past eighteen years disproves this theory. The Commission believes that the American public not only accepts the principle of federal funding for libraries but also equates it with the federal responsibility for public education.

Federal assistance programs for libraries have been for the acquisition of materials, the provision of new services, library training and research, new building construction, aid to special groups, and so forth. They have affected public libraries, school libraries, college and university libraries. A small portion of the funds under Title III of LSCA have also been available for inter-library cooperation. At the close of 1972, the total sum in the annual federal budget for library grant programs amounted to $140 million. In addition, the National Science Foundation and other government agencies have funded specific projects involving libraries, indexing

and abstracting services, and other organizations in the information community. The federal government also supports three major libraries: the Library of Congress, the National Library of Medicine, and the National Agricultural Library. As a result, these institutions are able to perform many important national library functions that benefit the people of the United States.

In 1973, the Administration recommended the elimination of federal grant programs for libraries. It recommended revenue sharing as an alternative method of supporting libraries, and the General Revenue Sharing Act qualified libraries to receive appropriations for operating expenses. The preponderance of testimony to the Commission indicates that the revenue sharing mechanism does not work well for libraries. The revenue sharing mechanism is unsatisfactory for libraries because it forces them to compete for funds with utilitarian agencies such as the police and fire departments. As educational agents in the community, libraries provide long range services to all people but, unfortunately, it is difficult to justify this as a local priority when conspicuous utilitarian problems need immediate correction. Indications received by the Commission thus far reveal that in some localities revenue sharing money is offsetting normal operating budgets of libraries rather than providing them with funds for new programs and services. In such circumstances, it is unlikely that

revenue sharing funds will have any impact at all on cooperative action programs or intersystem planning.

Recent actions by the Congress have restored appropriations for many of the categorical aid programs that were eliminated, but the policy of the Administration continues to favor their eventual termination. The President's budget for Fiscal 1975, released for information and Congressional action in January 1974, mentioned a new federal initiative in the area of library services. It outlines the provisions of new legislation, called the Library Partnership Act. This proposed Bill calls for the improvement of library services through a system of grants fostering interlibrary cooperation and through demonstrations of basic library services where these are non-existant or marginal. The general purposes of the bill are akin to those of Title III of the LSCA with the objectives more closely specified and the eligible community broadened.

While the Commission endorses individual activities that benefit libraries and users of libraries, it is even more strongly disposed to support a well planned, comprehensive program for library and information services, one that will benefit the entire nation. Categorical aid available to libraries under an array of authorizations has not yet fulfilled its worthy goals and should be continued, the Commission believes, until a comprehensive new program is authorized and adequately funded.

States and local governments vary greatly in the amount of financial assistance they give to libraries. Moreover, the way federal funds are used within the states varies widely. Some have used the money for state-level direction and coordination while others have spent it on new or improved local services. The federal principle of requiring matching funds from the states and/or local governments has itself had varied effects. In some instances it has led states to originate state programs that didn't exist before. In other cases it has not yet achieved matching state aid for libraries. However, in general, wealthy states have been able to take greater advantage of the opportunity than poor states even though the real need may have been greater among the latter.

Past federal funding has succeeded in fulfilling part of the original objectives of federal legislation but by no means all of them. An enlightened public policy of support for libraries and other information activities, and continuing financial assistance, are dual objectives which the Commission considers vital to the National Program. If the nation is to look forward to constructive development and utilization of knowledge resources throughout the country, an infusion of financial assistance on a large scale is mandatory, and the U.S. must also revise its philosophy on how federal and state funding should be allocated to support this nationwide purpose.

It is premature to stipulate the criteria for requesting financial assistance from the federal government under the National Program, but some suggestions are here put forward for consideration. For example, each recipient would agree in advance to:

1. Request support only for programs that are consistent with National Program aims and objectives.
2. Be willing to subscribe to and to utilize national bibliographic, technical, and other standards.
3. Provide assurance that programs begun with federal funds will be sustained by the recipient for at least several years.
4. A stipulation that federal funds would not be used to offset or dilute financial responsibility locally or at the state level to meet prescribed levels of service.
5. Match federal funds with local or state funds according to a formula based on factors other than merely population or per capita income.
6. Develop a mutually compatible formula for matching funds between the state and local governments similar to that between the state and federal government.
7. Adhere to the protocols and conventions of use established for the nationwide network.

Principles and criteria like those above will have to be arrived at by careful study and discussion by all parties concerned after which they will need to be incorporated in new legislation for the National Program. The Commission expects to devise these guidelines in cooperation with representatives from the public and private sectors. In recognition of the wide divergence of development existing among the states and other agencies in the private sector, it is expected that future funding would support three different levels of need:

1. To help establish or initiate new programs.
2. To help strengthen existing programs. And,
3. To help extend the scope of successful programs.

Until a carefully articulated funding policy is worked out for the National Program, and until new legislation is passed to implement the National Program, the Commission strongly favors the continuation of categorical aid under existing titles and special expansion of Title III LSCA in order to maintain national momentum toward cooperative projects and networking.

Figure III depicts the type and purpose of federal funding support required for the National Program.

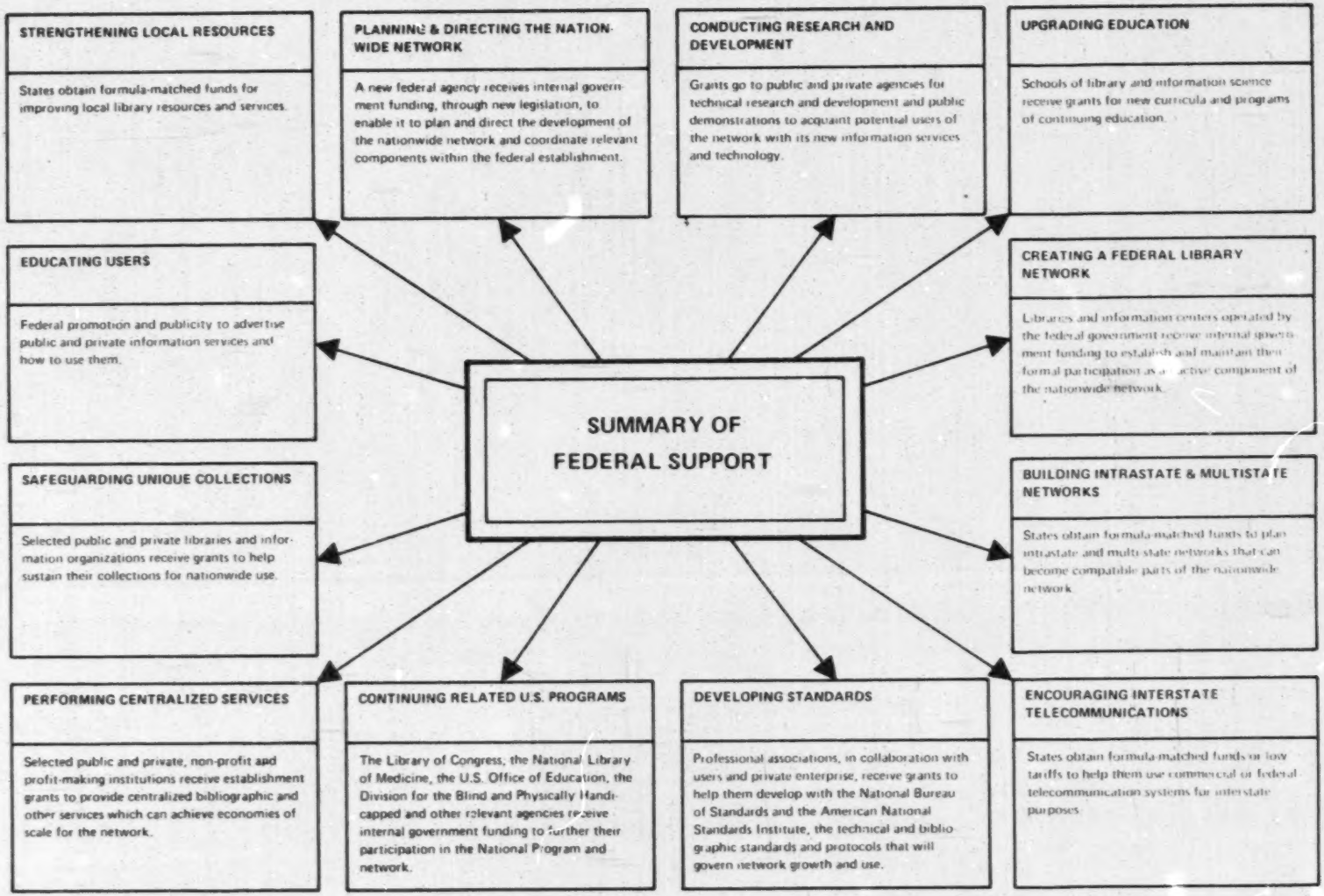
STRENGTHENING LOCAL RESOURCES
States obtain formula-matched funds for improving local library resources and services.
PLANNING & DIRECTING THE NATION-WIDE NETWORK
A new federal agency receives internal government funding, through new legislation, to enable it to plan and direct the development of the nationwide network and coordinate relevant components within the federal establishment.
CONDUCTING RESEARCH AND DEVELOPMENT
Grants go to public and private agencies for technical research and development and public demonstrations to acquaint potential users of the network with its new information services and technology.
UPGRADING EDUCATION
Schools of library and information science receive grants for new curricula and programs of continuing education.
EDUCATING USERS
Federal promotion and publicity to advertise public and private information services and how to use them.
CREATING A FEDERAL LIBRARY NETWORK
Libraries and information centers operated by the federal government receive internal government funding to establish and maintain their formal participation as an active component of the nationwide network.
SUMMARY OF FEDERAL SUPPORT
SAFEGUARDING UNIQUE COLLECTIONS
Selected public and private libraries and information organizations receive grants to help sustain their collections for nationwide use.
BUILDING INTRASTATE & MULTISTATE NETWORKS
States obtain formula-matched funds to plan intrastate and multi-state networks that can become compatible parts of the nationwide network.
PERFORMING CENTRALIZED SERVICES
Selected public and private, non-profit and profit-making institutions receive establishment grants to provide centralized bibliographic and other services which can achieve economies of scale for the network.
CONTINUING RELATED U.S. PROGRAMS
The Library of Congress, the National Library of Medicine, the U.S. Office of Education, the Division for the Blind and Physically Handicapped and other relevant agencies receive internal government funding to further their participation in the National Program and network.
DEVELOPING STANDARDS
Professional associations, in collaboration with users and private enterprise, receive grants to help them develop with the National Bureau of Standards and the American National Standards Institute, the technical and bibliographic standards and protocols that will govern network growth and use.
ENCOURAGING INTERSTATE TELECOMMUNICATIONS
States obtain formula-matched funds or low tariffs to help them use commercial or federal telecommunication systems for interstate purposes.

FIGURE III. PROPOSED COORDINATED FEDERAL SUPPORT TO IMPLEMENT THE NATIONAL PROGRAM

VII. CONCLUSION

The Commission believes that the country's library and information services are not yet organized to meet the needs of the nation as a whole. Different libraries and information services are indeed performing important services for their respective clienteles but, as a group, they are developing hapazardly. The Commission believes the time has come for the nation to change direction by henceforth treating recorded information and knowledge as a national resource and making the benefits of library and information services available for all the people. Such action would prove a great intellectual catalyst for the country, and place the United States in a stronger position to cope with its own economic and social problems. If we continue traditional practices much longer, the Commission fears that, within the span of only a few years, America will be faced with information chaos that will work against the country's best interests.

Deficiencies in current resources and services demand careful planning for the systematic development of material and human resources, the continuing education of professional and paraprofessional personnel, an adequate financial base for libraries and other information-handling units, the cost-effective application of new technologies, and the development of a spirit of cooperation without which no nationwide plan for improved services can succeed.

A major transformation of the library and information structure in this country is required. The new structure must be based on a new philosophy of service and a new federal and state investment policy. Success will depend on sound planning by each and every library and information center, on dedication to a common sense of direction and purpose, on a commitment to national cooperative action, and on new federal policies which treat information as a national resource.

Such a program implies an unprecedented investment in libraries and information centers by federal, state, and local governments. Merely continuing the past practice of giving small grants to the states for individual libraries or for uncoordinated systems development will not do the job. The Commission believes that the federal government must bear a permanent responsibility for preserving and maintaining the knowledge resources of the nation and for making a specific commitment to their interdependent development.

The proposed National Program implies changes in jurisdictional arrangements, in forms of bibliographic processing, in patterns of service, and in funding practices. These changes will come about gradually, and it will take considerable time to achieve substantial results. Strong resources must, therefore, continue to be built at the local and state levels with federal assistance while

the new basis for a nationwide network is being prepared.

We on the Commission believe that the profession is prepared and is ready to advance traditional librarianship, to apply computer and communication technology, and to work together in creating the strongest possible information services for the country.

America must not forget her dream of individual freedom and of an open approach to learning and knowledge. The Commission firmly believes that recorded knowledge is a national resource and, its nationwide use a national responsibility. It urges the American people, through the federal government, state and local governments, and public and private institutions to support a nationwide program of library and information service as a high-priority national goal.

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GLOSSARY

The language of modern library and information science is derived from several disciplines. This glossary defines the principal technical terms used by the Commission in drafting this document.

Bibliographic control

The uniform identification of items of recorded information in various media and the availability of a mechanism for gaining subsequent access to such information.

Consortium

A formal association of libraries and other organizations, having the same or interrelated service or processing objectives.

Constituency

A particular user group with specialized requirements for library and information service.

Data Bases

Files of bibliographic or other information recorded on magnetic tape for computer processing.

Federal

Synonymous with U.S. Government.

Federal agency

A component of government in the Executive or Legislative Branch of the federal establishment.

Hardware

The physical equipment in a data processing or other machine system (as contrasted with software).

Information

Includes facts and other recorded knowledge found in books, periodicals, newspapers, reports, audiovisual formats, magnetic tapes, data banks (bases), and other recording media. (The word "information", in this document, is used interchangeably with the word "knowledge".)

Information center

An activity in the public or private sector which provides in-depth information services in a prescribed subject field and synthesizes information on request.

Information scientist

A person qualified in systems analysis, computers, communications, micrographics, and other scientific and technical means for processing information.

Information technology

Refers to the application of computers, telecommunications, and micrographic, audiovisual, and other equipment, techniques, and materials for making information available to people.

Interface

The area or mechanism of contact and interaction between any two systems, subsystems, or organizations. An interface may be technical (e.g., electronic) or administrative.

Interlibrary cooperation

Informal agreements between and among libraries to participate in a specific process or service for mutual benefit.

Librarian

A specialist in the care and management of recorded information and the promotion of its use.

Library

An institution where diverse recorded information is stored, systematically organized, and where services are provided to facilitate its use. It may contain books, films, magazines, maps, manuscripts, microfilms, audiovisual materials, tape recordings, computer tapes, etc. It also provides information services to requesters from its own and from outside resources.

Library service

The process by which libraries satisfy user requests for materials and information in any medium.

Multistate affiliations

Regional arrangements (by informal agreement, compact or by contract) among states or statewide agencies to pursue common library and information programs.

National

Refers to interests that transcend local, state, and regional concerns. The term is also used to refer to organizations whose operations embody or serve these broader interests.

National bibliographic center

A place where the basic record for each bibliographic item is created (or verified) and held to serve the full range of needs of libraries, information centers, abstracting and indexing services, and national and trade bibliographies.

National lending library

A central library, within a country, responsible for acquiring at least one copy of a prescribed class of material and making it available to other libraries by loan or photocopy service.

National plan

The phased schedule by which the national program is implemented to meet its program objectives.

National program

An organized and articulated statement prepared to provide for the coherent development of library and information activities in the U.S. to meet the needs of its people.

Nationwide

That which extends throughout the country.

Network

Two or more libraries and/or other organizations engaged in a common pattern of information exchange, through communications, for some functional purpose. (Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them.)

Network, statewide

A formal arrangement whereby materials, information, and services provided by a variety of types of libraries and/or other organizations, in the state are made available to all potential users.

On-Line computer retrieval services

Retrieval services involving direct interactive communication between the user at a terminal and the computer programmed to provide access to one or more data bases.

Private sector

Includes organizations outside of government, such as profit-making companies and not-for-profit institutions, which process, store, or disseminate information. The main components of the private sector are: the publishing industry, the audiovisual industry, the abstracting and indexing services, the data base producers, the reprint houses, the private college and research libraries, special interest societies, professional organizations, commercial information services, and others.

Public sector

Library and information activities which are tax-supported and directly affiliated with local, state, and federal governments.

Regional resource center

An institution especially chartered to provide a common service to a cooperative of libraries in differing political jurisdictions.

Software

The intellectual instructions - such as a computer program - which govern machine operations.

Special collection

Refers to a body of materials and information which shares a common characteristic, such as form (newspapers), period (Renaissance), language (Japanese), or subject (chemistry). Special collections are generally unique collections.

State library agency

The official agency of a state charged by the law of that state with the extension and development of public library services throughout the state. This agency has adequate authority under the law of the state to administer state plans in accordance with the provisions of the Library Services and Construction Act.

System

An organization of people, machines, material resources, and procedures, designed to accomplish a given purpose or set of purposes. A system may exist within a library or information activity, or it may exist when two or more library or information activities agree to participate in a common service program utilizing their resources.

Telecommunication

The exchange of information by electrical transmission.

Telefacsimile

The electrical transmission of an exact duplicate of a page, a graphic, or a film image.

User

Any individual or group with a desire, no matter how casual or how serious, to use libraries and information facilities.

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